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STRATEGIC MARKET PERSPECTIVE

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The Influence of Support on  
Software Product Selection  
Europe 1996



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# **The Influence of Support on Software Product Selection Europe 1996**

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# Abstract

Multivendor software environments are becoming more complex, hence the support of these environments is an increasingly important product choice factor for users.

Today, software product support is a major strategic tool which can be utilised by systems and software product vendors as a means of gaining a competitive advantage.

This report focuses on the significance of support as a software product choice factor for users, based on the findings of two recent INPUT studies:

- The significance of support as a product choice determinant when choosing between Windows NT Advanced Server and Unix
- Early user reactions to Windows 95 and its associated support offerings.



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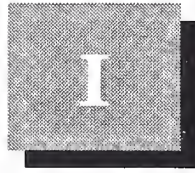
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# Introduction

This report was produced as part of INPUT's Software Product Support Programme in Europe.

## A

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### Purpose and Scope

As the population of software users continues to increase rapidly, so user support needs continue to diversify.

The trend towards client/server computing has precipitated the use of more complex software products and placed these products into business critical environments. Hence, such products demand tailored support services that meet specific business requirements.

Additionally, the continued migration to client/server has led to increasing demand for multivendor support, and users often express a need for such support to be provided from one source. At present, vendors do not seem to have fully appreciated the extent of the challenges involved in exploiting this market.

This report examines the demand side of the product support market. It analyses how users view support as a product choice factor when selecting either Windows NT or UNIX. It also analyses early user reactions to Windows 95 and its associated support.

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**B**

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**Methodology**

This report was based upon the following research:

- Thirty in-depth interviews with users of UNIX and Windows NT Advanced Server
- Sixty questionnaires completed by Windows 95 users throughout Europe
- Secondary research from online information sources
- INPUT's continuous analysis of European software product and information services markets.

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**C**

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**Report Structure**

The remaining chapters of this report are as follows:

- *Chapter II* is an executive overview which provides a summary of the key findings of the research and INPUT's recommendations for vendors
- *Chapter III* examines user satisfaction with support for Windows NT Advanced Server and UNIX. It provides commentary on the significance of support as a product choice factor in the battle between NT and UNIX at the midrange server level
- *Chapter IV* analyses the findings of a survey of Windows 95 users. It examines initial user impressions of the product and comments on user satisfaction with Windows 95 support
- *Chapter V* offers more general advice for vendors in terms of understanding the nature of users' software environments and how to satisfy user support needs
- *Appendix A* contains the questionnaire used in the Windows 95 survey
- *Appendix B* explains the principal discussion points of the in-depth interviews conducted with UNIX and Windows NT Advanced Server users

- *Appendix C* describes INPUT's classification of the software product support market.

## D

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### Related INPUT Reports

Other INPUT reports which address topics related to the subjects discussed here include the following:

*Software Product Support Competitive Analysis — Europe 1995*

*Software Product Support Market Trends and Forecast — Europe 1995-2000*

*IT Customer Services Market Trends and Forecast — Europe 1995-2000*

*Software Product Support Competitive Analysis — Europe 1995*

*Customer Services Competitive Analysis — Europe 1995*

*Vendor Software Product Support Strategies — Europe 1995*

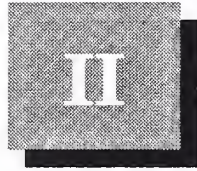
*Supporting Client/Server Systems — Europe 1994*

*Desktop Network Support Opportunities — Europe 1994-1999*

*European Software Product Support, New Open Market Opportunities — 1994*



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## Executive Overview

Multivendor software environments are becoming more complex, hence the support of these environments is an increasingly important product choice factor for users.

Today, software product support is a major strategic tool which can be utilised by systems and software product vendors as a means of gaining a competitive advantage.

This report focuses on the significance of support as a product choice factor for users with particular emphasis on Windows 95, and Unix and Windows NT Advanced Server at the midrange server level.

INPUT has conducted two important studies:

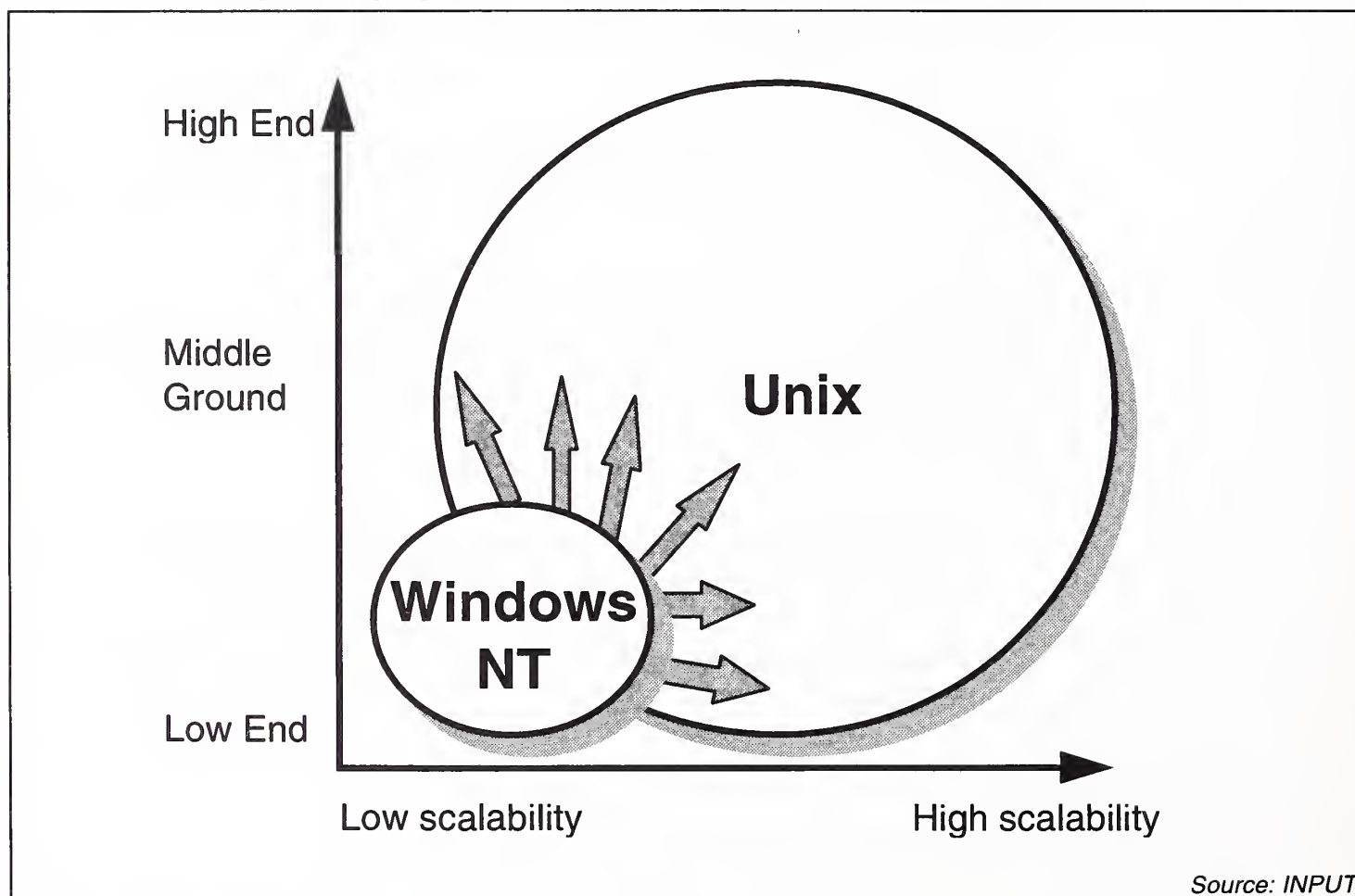
- The significance of support as a product choice determinant when choosing between Windows NT Advanced Server and Unix
- Early user reactions to Windows 95 and its associated support offerings.

**A****Emergence of NT Puts UNIX Support Costs in the Spotlight**

Windows NT Advanced Server is rapidly penetrating traditional Unix markets. NT is becoming increasingly scaleable and robust. Additionally, it offers much of the functionality that was once only available on Unix platforms. Based on purely technical considerations, it can therefore compete with Unix at the low end and midrange server levels.

Exhibit II-1 illustrates the inroads being made by NT into traditional Unix territory.

Exhibit II-1

**Operating System Wars—The Battle for the Middle Ground**

Most large user organisations offer first and second line support for server operating systems internally. Complex client/server environments are making ever increasing demands on these internal resources. User organisations are responding by attempting to control the resulting support costs.

Windows NT is perceived to be less expensive to support than Unix, which gives it a valuable competitive advantage. In attempting to control support costs, many Unix users are choosing one of two options:

- Migrate to Windows NT
- Outsource first and second line Unix support.

### **1. Migration to Windows NT**

Migrating to Windows NT will reduce support costs and therefore the overall cost of IT ownership. Lower support costs for NT exist for the following reasons:

- NT is a less complex product than Unix
- There are many different strands of Unix to support, some of which have relatively small installed bases
- Microsoft have stimulated an open support market for Windows NT.

However, many user organisations do not yet perceive NT to be sufficiently mature for their requirements. Many DBMSs are not primed for interoperability with NT and NT undoubtedly offers less functionality than Unix.

### **2. Outsourcing Unix Support**

Outsourcing Unix support would seem to be the preferred option of many user organisations that are currently seeking to reduce support costs. There are many different flavours of Unix and some user organisations express satisfaction with external support for their particular Unix variant.

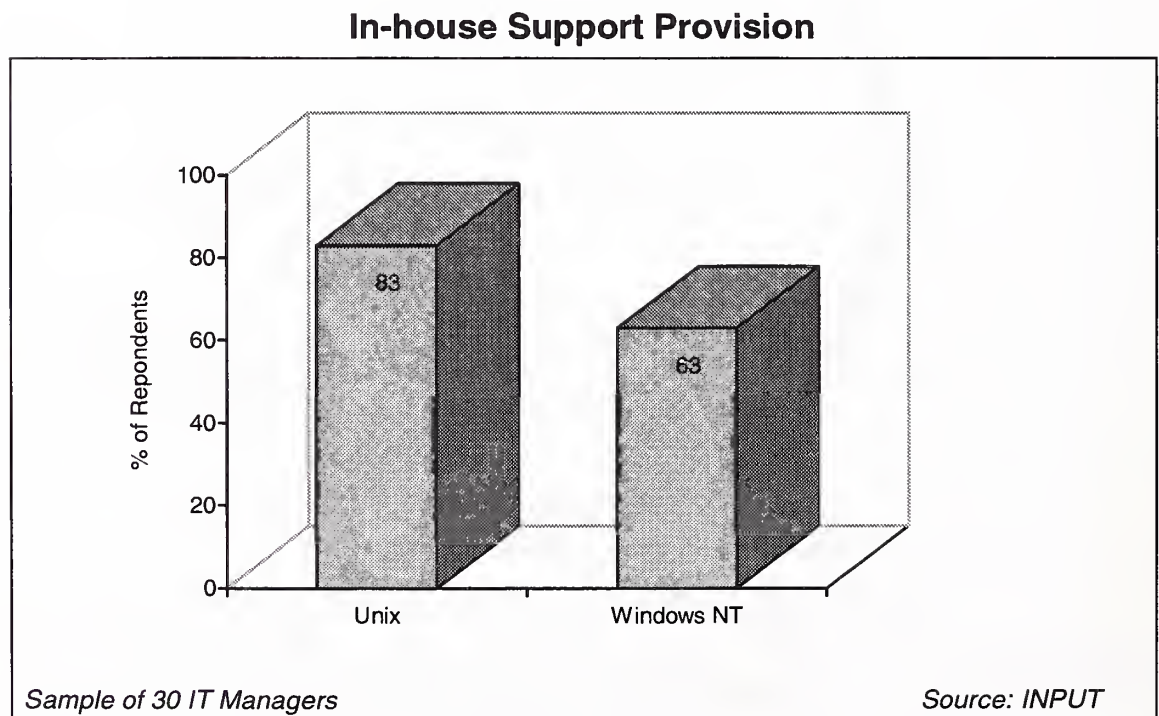
For example, in a recent INPUT survey, Sun and Pyramid customers expressed high levels of satisfaction with support provided by these two vendors.

However, overall, users express dissatisfaction with Unix support both from Unix vendors and third parties. In order to ensure that Unix can compete effectively with Windows NT, Unix vendors must ensure that users are satisfied with external Unix support, sourced from either themselves or third parties.

By controlling the quality of NT support through accreditation schemes and encouraging large numbers of third parties to support their product, Microsoft have created choice and competition in the NT support market. Indeed, user organisations have a much greater tendency to source NT support externally than Unix support, largely as a result of the choice available in the NT support market. Furthermore, users express a relatively high degree of satisfaction with external NT support.

Exhibit II-2 reveals that user organisations are much more likely to source first and second line Unix support internally than Windows NT support. Around 80% of respondents indicated that some Unix support is provided in-house compared to around 60% who indicated that some NT support is provided in-house.

Exhibit II-2





Although Unix offers more functionality than NT, undertaking relatively simple tasks, such as setting up a printer using Unix, are complex and likely to precipitate a higher demand for support than similar operations using Windows NT. Therefore, Unix's relative complexity engenders extensive internal support provision. Furthermore, user organisations are more likely to express dissatisfaction with external Unix support than with external NT support.

Exhibit II-3 illustrates satisfaction with current support arrangements for both Unix and Windows NT.

Exhibit II-3

**Unix/NT Support Characteristics**

	<b>Internal Support</b>	<b>External Support Satisfaction</b>	<b>Level of Support Required</b>
<b>NT</b>	<b>Some</b>	<b>High</b>	<b>Low</b>
<b>Unix</b>	<b>Extensive</b>	<b>Medium</b>	<b>High</b>

Source: INPUT

**B****Opportunities Arise for Unix Vendors**

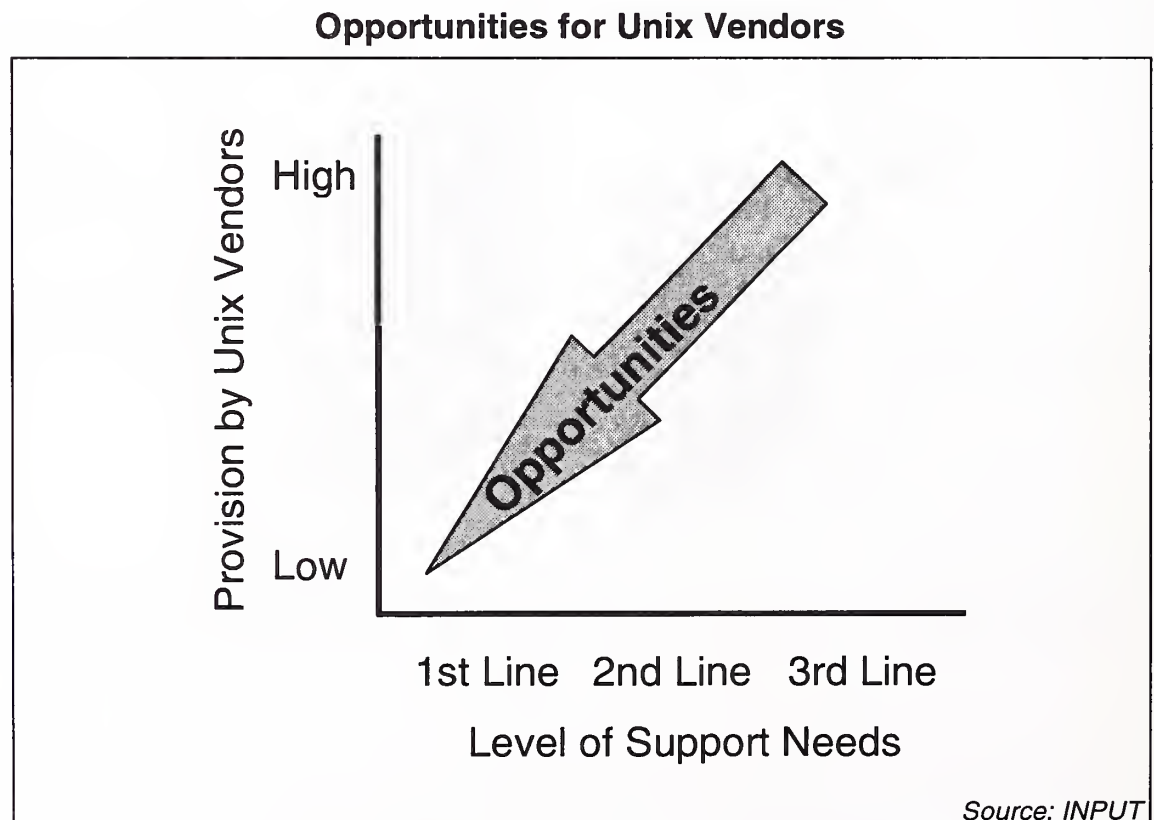
User organisations are increasingly demanding external Unix support that matches their particular needs at a lower cost than the equivalent in-house support.

Large numbers of vendors currently offer support for Windows NT. Channel players, professional services vendors and systems vendors now offer first, second and third line support for Windows NT.

However, external Unix support is much less pervasive. The fact that several versions of Unix exist in the market adds to the complications involved in establishing a network of external Unix support vendors.

Most external Unix support is essentially proprietary. It tends to be sourced from the vendor of the particular Unix variant, many of whom are slow to respond to user demand. Most user organisations currently source third line support from their Unix vendors, however Unix support vendors must exploit the opportunity to offer flexible first and second line support to meet growing demand (see Exhibit II-4).

Exhibit II-4



The relative complexity of Unix also contributes to the challenges involved in offering external Unix support. It takes a lot more time to train a Unix support consultant in one Unix variant than in Windows NT. The ability to support multiple Unix strands is even more demanding. Indeed one IS manager stated that the presence of so many Unix flavours makes it too expensive to buy specialist skills on a contract basis. Furthermore, the company in question sources support externally for other systems software products as well as a number of horizontal applications.

Certain Unix strands are considered to require less support than others. In a recent INPUT survey, several user organisations indicated that they had selected SCO Unix because it is perceived to be relatively easy to use, hence support costs are lower.

Large organisations tend to offer first and second line support in-house but tend to source third line support from Unix vendors.

However, small organisations are typically unable to afford to provide in-house Unix support and tend to wholly rely on the Unix vendor for support.

Essentially, improved external Unix support provision will enhance the competitive position of Unix by reducing its cost of ownership relative to that of Windows NT Advanced Server. Given that many user organisations express a desire to source external support from Unix vendors, these vendors are well placed to exploit the opportunity to offer comprehensive support services.

## C

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### Windows 95 Meets Early User Acceptance

Over the past year, Microsoft has established a network of certified Desktop Support Partners (DSPs) and Solution Providers.

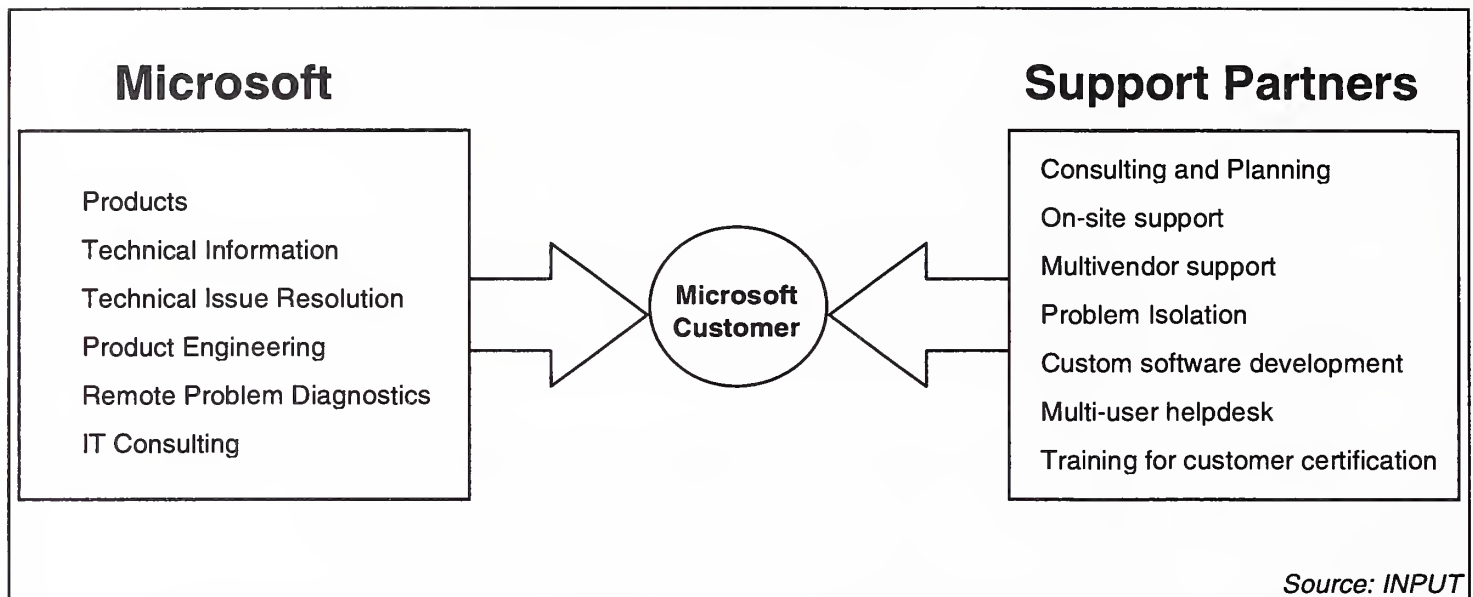
Microsoft's aim is to outsource much of its support to third parties in order to increase its support capacity. When a call is made to Microsoft product support services (PSS), it is likely to be routed to one of Microsoft's DSPs.

Essentially, Microsoft has made a strategic decision to focus on software product development and create an open market for the support of its products. Its accreditation schemes ensure that it retains control of the quality of support.

Exhibit II-5 illustrates the offerings provided to the user by both Microsoft and their Desktop Support Partners.

Exhibit II-5

### Microsoft Support Partners

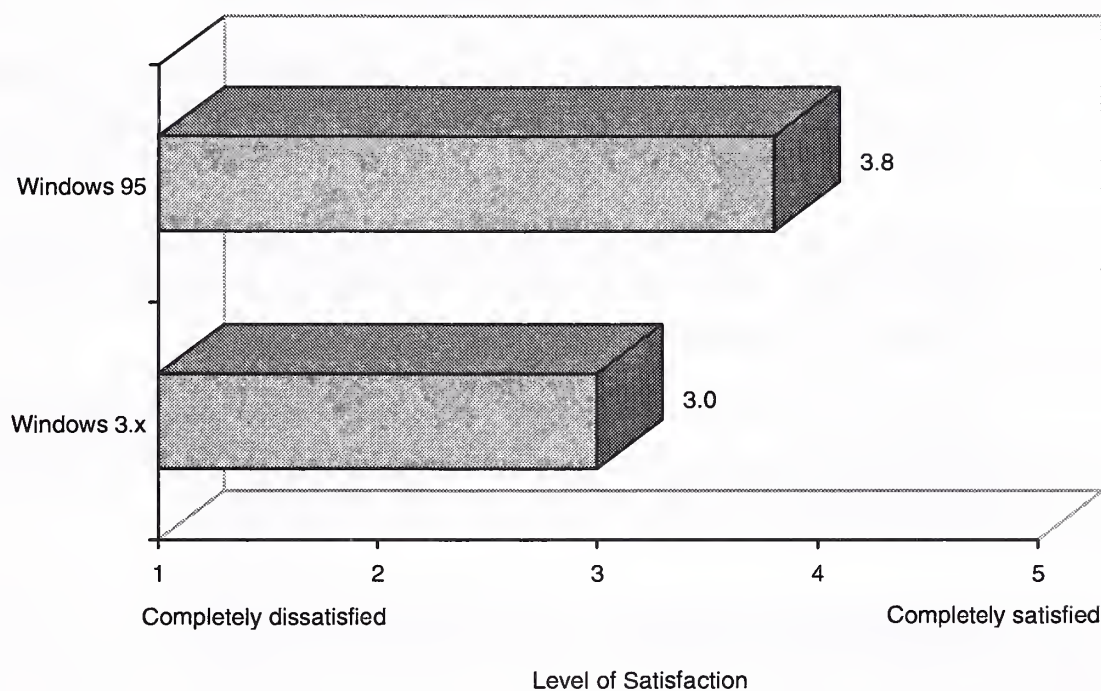


These arrangements are expected to reduce call waiting and problem resolution times, hence increasing user satisfaction with Microsoft's desktop products.

A recent INPUT survey revealed that users of Windows 95 are more satisfied with its support than with support that was offered for Windows 3.x (see Exhibit II-6).



Exhibit II-6

**User Satisfaction with Windows Support***Source: INPUT*

This increase in satisfaction can largely be attributed to the additional support capacity that Microsoft have established.

Microsoft recently stated that they received fewer support calls than they had anticipated. The company argue that this is because Windows 95's new features reduce support requirements. Intelligent installation facilities and 'plug and play' features have diminished the need for support.

However, Microsoft have sold fewer copies of Windows 95 than they had expected, suggesting that in fact they may have created too much support capacity. Many large organisations have adopted a cautious approach to Windows 95 migration as they wait for problems to be ironed out. Additionally, many user organisations are considering migrating to Windows NT Workstation, bypassing Windows 95 migration altogether.



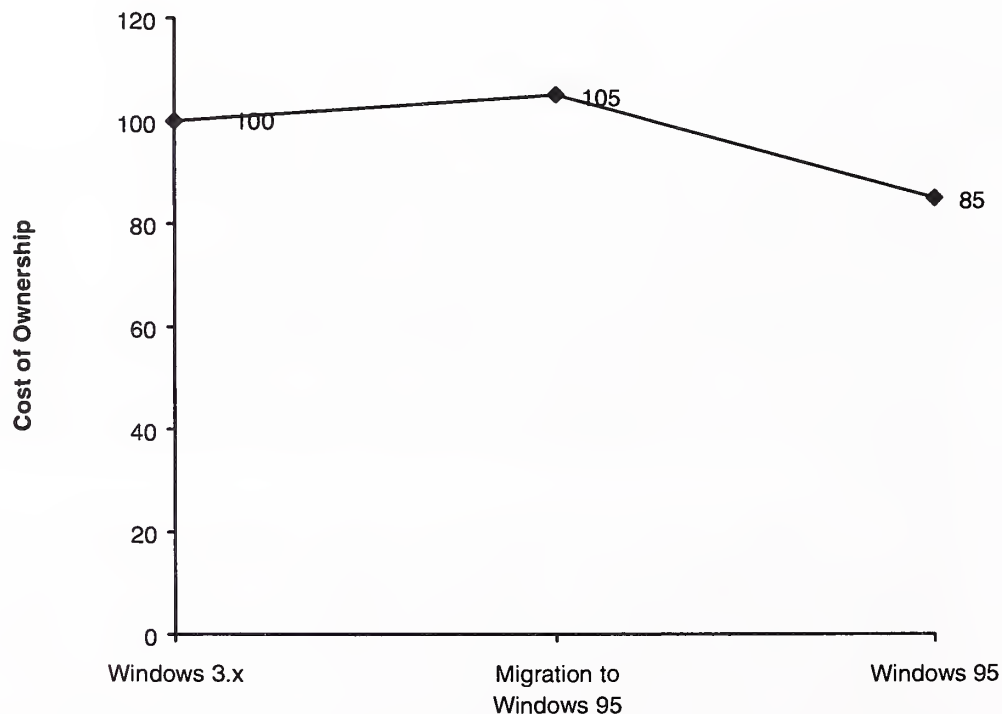
**D****How Windows 95 Lowers the Cost of PC Ownership**

INPUT estimates that initial Windows 95 migration costs will raise the yearly Windows PC cost of ownership by 5%. This can largely be attributed to the expense of hardware upgrades and training costs.

However, after one year of ownership, INPUT expects the PC cost of ownership to be 15% lower than it was when Windows 3.x was the dominant PC operating system.

Exhibit II-7 illustrates the effect of migrating to Windows 95 on the PC cost of ownership. INPUT expects the cost of ownership in the first year to increase though it will decrease after the first year.

Exhibit II-7

**Windows 95 Migration — PC Ownership Costs**

PC Cost of Ownership Under Windows 3.x = 100

Source: INPUT

The medium term reduction in the Windows 95 support costs will reduce its overall cost of ownership. INPUT believes that increasing numbers of user organisations will migrate to Windows 95 during 1996, and the cost of ownership will be a major influence on corporate decisions.

Additionally, migration will be driven by:

- The bundling of Windows 95 with new PCs
- New software applications being optimised for Windows 95
- Product support infrastructures being primed for the 32 bit Windows environment.

In summary, INPUT believes that increased user satisfaction with Windows 95 and the reduced support requirements are a positive sign for Microsoft.

User organisations will increasingly migrate to Windows 95 and the overall lower Windows 95 cost of ownership will be one of the major driving forces. However, Microsoft are likely to find that Windows NT Workstation will become Windows 95's main competitor.

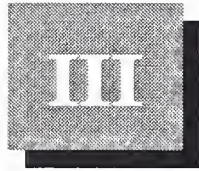
Essentially each support environment necessitates the development of customised support models. INPUT's two studies have revealed that:

- Support is playing an increasing role as a product choice factor for users selecting either Windows NT Advanced Server or Unix as a server operating system
- Falling support costs are reducing the PC cost of ownership largely as a result of Windows 95's new features. Microsoft has achieved early success by outsourcing much of its support and can expect to continue to receive relatively high approval ratings for its offerings.

As the rate of technology change increases and user environments become increasingly complex, growing numbers of systems and software product vendors will follow Microsoft's example and outsource support functions. Third party support vendors will continue to successfully exploit these new market opportunities by working together with product vendors.

However, as the Internet becomes more pervasive, support services will increasingly be offered remotely. Support vendors must embrace this challenge and adjust their support infrastructures accordingly.

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# Software Product Support—A Product Differentiator in the Middle Ground

This chapter outlines the impact of Windows NT on traditional Unix markets and examines the significance of support as a choice factor for users choosing between Unix and Windows NT. It suggests ways in which support offerings can be improved, in particular for Unix vendors.

## **A** **Windows NT Penetrates Traditional Unix Territory**

---

The continuing migration to client/server technology has enabled Unix vendors to enjoy a strong position in the market for operating systems at the midrange and high end server levels.

However, the threat to Unix in this market is not difficult to identify. Microsoft virtually owns the desktop market and is already penetrating the low end server market. The increased stability, scalability and functionality of NT is becoming increasingly attractive at the midrange server level.

Furthermore, Windows NT could well outship all Unix variants combined in 1996.

For the purposes of this study, the client/server environment has been divided into the following three segments:

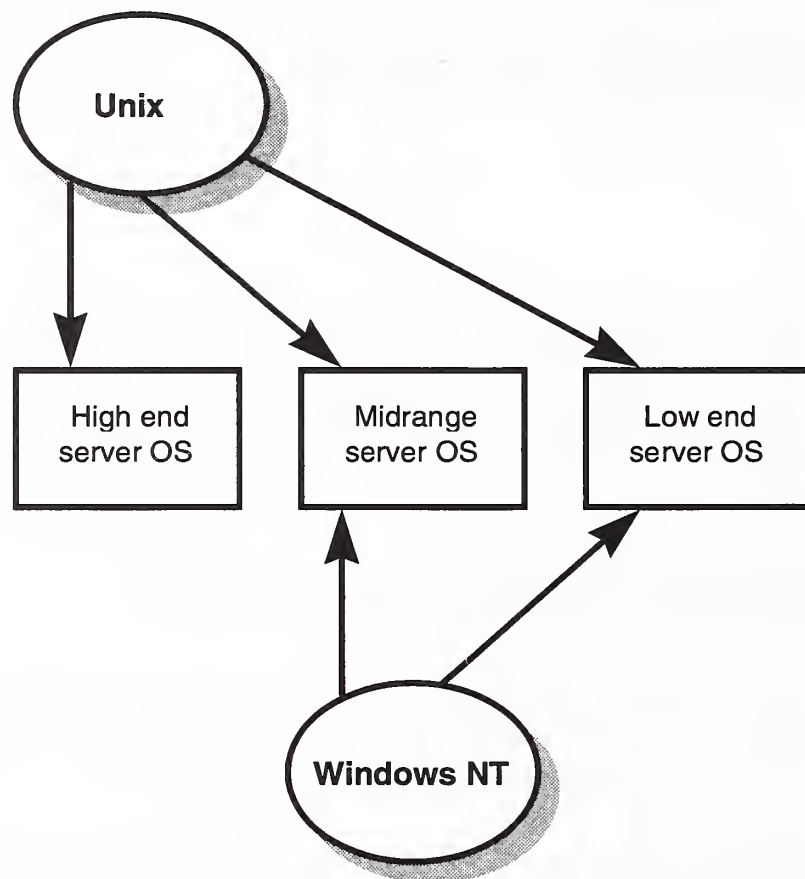
- Low end (10s of users)

- Middle ground (100s of users)
- High end (1000s of users).

Exhibit III-1 shows the areas in which NT now competes directly with Unix.

Exhibit III-1

### Market Positioning



Source: INPUT

The Unix community has grown accustomed to a dominant position at the midrange server level over the last few years and must radically change its strategy to avoid becoming a niche player at the high end.



**B****Support Issues Influence NT/Unix Choice**

Although Unix is still more scaleable than NT, the scalability gap is continuing to shrink. Increased NT scalability can be attributed to the introduction of NT 3.5.1 and Microsoft SQL Server 6.0. This combination can now effectively scale to six Pentium processors.

In terms of price/performance ratios, NT is far ahead largely due to the fact that SQL Server is an NT-only database. However, databases such as Oracle, Informix and Sybase perform less well on NT than on Unix platforms. This weakness is not caused by some inherent NT deficiency. Instead, the database vendors have put more emphasis on gearing their products to operate on a Unix platform. However, the database vendors can be expected to respond to market trends by optimising their products to run on NT platforms in 1996.

Users are increasingly perceiving NT as sufficiently reliable and robust for their requirements, although Unix systems will continue to be considered more robust and to offer much greater functionality. Indeed, the Unix performance advantage is likely to be maintained due to the fact that individual Unix vendors tend to sell hardware and software as one solution.

When choosing between NT and Unix, the overall cost of ownership is one of the primary determining factors. Software product support is a major contributory factor to this cost.

NT ownership costs are higher than those for Unix and one of the main cost containing factors is lower support costs which are held down largely by fewer support requirements for NT than for Unix.

Given that Unix products are more complex than NT, Unix support costs are higher. For example, an IT manager in a large UK bank stated that, it costs \$75,000 per year for one dedicated full-time NT support consultant on-site compared with \$150,000 for a Unix support consultant.

Individual proprietary Unix variants create a situation where vendors are better placed than third parties to provide support. The relatively closed market for this proprietary support engenders higher support prices.

Microsoft, however, have stimulated an open market for the support of NT. The company has certified a number of Authorised Support Centres (ASCs), all of whom are Unix vendors, to provide support for NT. The company hope to authorise more support providers, thus stimulating competition between the vendors, reducing the cost, and raising the quality of support.

Increasing support costs are of course raising overall costs of ownership. As the Unix vendors consolidate and a core of large vendors attempt to standardise their offerings, many smaller Unix vendors will cease to focus on Unix and their Unix products may cease to be produced. This will precipitate a rise in support costs for the Unix products that are no longer supplied. In order to contain the cost of ownership, users can be expected to select the more common Unix variants that seem likely to adhere to any Unix standards. These Unix variants are less likely to become obsolete.

---

## C

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### Support as a Competitive Weapon at the Midrange Server Level

Most organisations make a choice between Unix and Windows NT based primarily on technical considerations. Unix vendors have generally concentrated on this criterion in their attempts to gain a competitive advantage.

However, insufficient attention has been focused on the use of support offerings as both defensive and offensive weapons in the midrange server operating system battles.

Unix vendors have an opportunity to increase revenues from software product support provision whilst strengthening their competitive positions in order to resist the increasing threat of Windows NT at the midrange server level.

Vendor strategies need to acknowledge the following market realities:

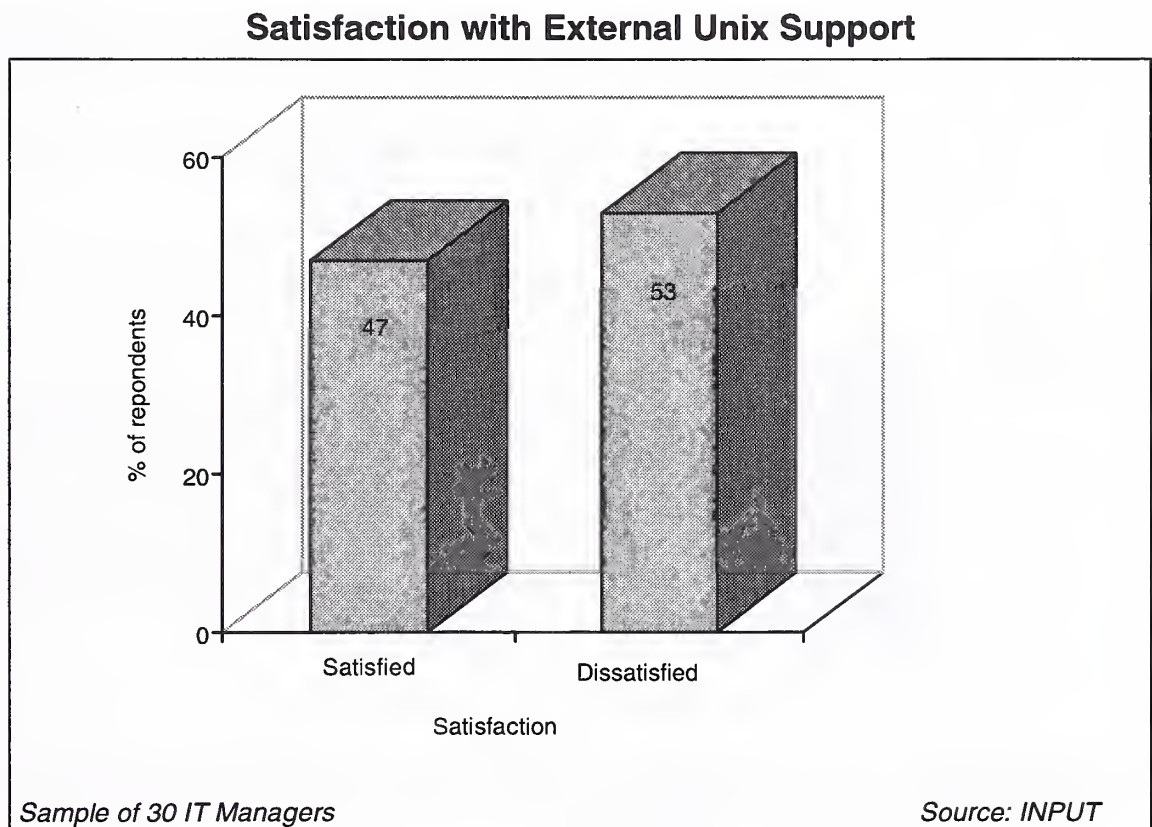
- Unix product support is currently perceived by users to have significant weaknesses

- Many large organisations currently depend upon inadequate in-house support facilities.

### 1. Users Express Dissatisfaction with Unix Support

In a recent INPUT survey, more users expressed dissatisfaction than satisfaction with Unix support from an external supplier as shown in Exhibit III-2.

Exhibit III-2



Users expressed dissatisfaction with the following Unix support characteristics:

- Poor escalation procedures
- Lack of third party product integration expertise
- Lengthy waiting periods for problem resolution
- Poor online support facilities.

Most Unix support vendors are not considered by users to have accounted for different levels of user skill sets. They are not perceived to have



tailored their support offerings to specific user needs. Non-technical users, in particular, express dissatisfaction with Unix support. Unix users tend to interface with vendor support services only at a complex technical level.

## **2. Large Organisations Face Internal Support Problems**

Enterprises are currently committing resources to maintaining expensive in-house support facilities.

In interviews conducted by INPUT, users revealed the following justifications for maintaining internal Unix support facilities:

- Internal support delivers a responsive and flexible service by known and trusted personnel
- Internal support gives organisations greater control of product support facilities
- There is a high degree of reluctance to use external product support as vendor support models are not perceived to match user needs.

However, internal Unix support is becoming increasingly expensive. INPUT research indicates that this trend will cause user organisations to either:

- Source Unix support externally
- Migrate to NT which is cheaper to support both internally and externally.

## **D**

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### **Users Will Increasingly Source Unix Support Externally**

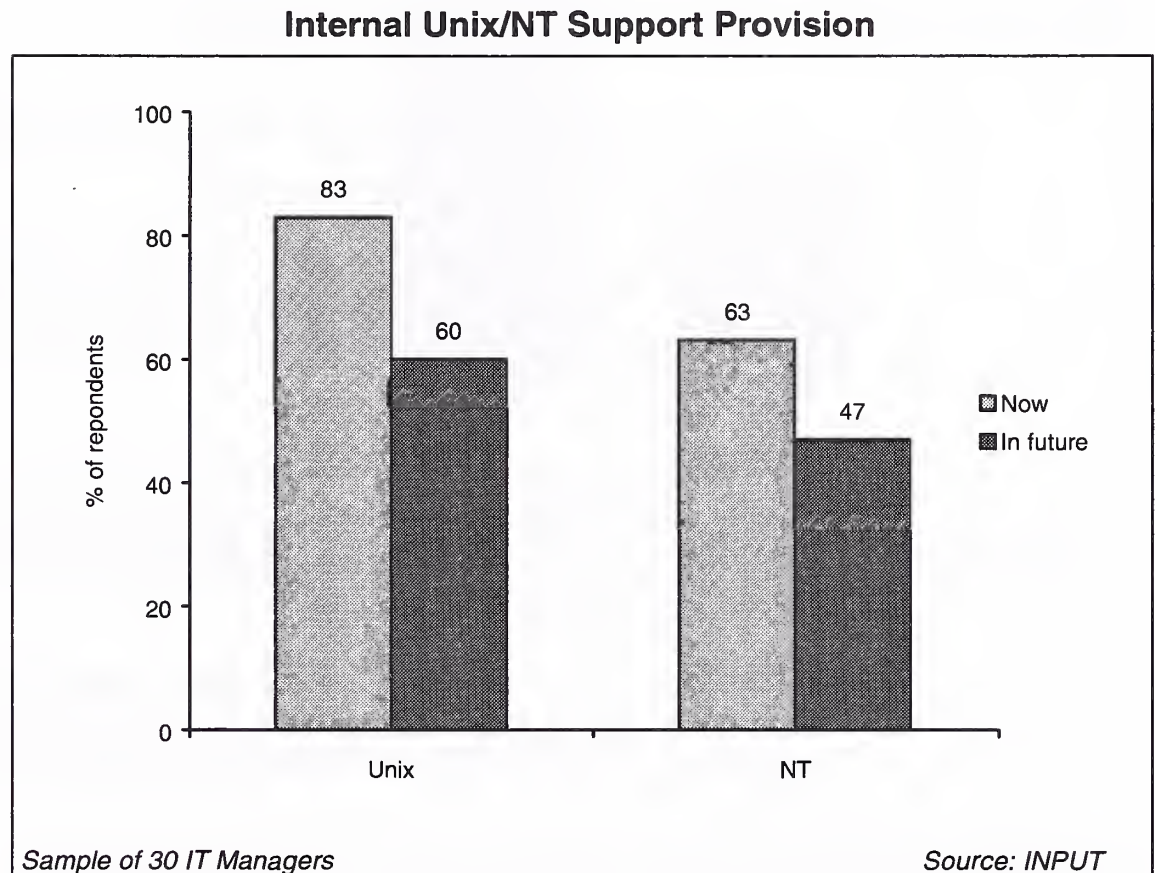
Cost justification and benchmarking play increasingly important roles in cost containment and greater emphasis is now placed on retaining only core business activities in-house.

Given that many large enterprises maintain expensive internal software product support services and yet express dissatisfaction with external Unix support offerings, it becomes clear that there are opportunities in the market for improved external Unix software product support.

For these reasons, vendors can be expected to improve their support offerings and support will increasingly be sourced externally for both NT and Unix by most large organisations.

INPUT research indicates that user organisations intend to increasingly source their support externally (see Exhibit III-3).

Exhibit III-3



Over 80% of user organisations currently source first and second line Unix support internally, whereas just over 60% currently source the equivalent level of Windows NT support internally.

The relative lack of NT functionality and the established third party NT support infrastructures make external NT support more attractive. Additionally, NT's management system includes a remote support facility which not all Unix variants can boast. User organisations clearly wish to outsource Unix support where possible but continue to express a relatively high degree of dissatisfaction with external Unix support.

One Unix user recently interviewed by INPUT stated that external support contracts work fairly well in the first 12-15 months of life but



subsequently the quality of service declines as more complex problems inevitably arise.

Despite these problems, external support vendors will increasingly respond to user demand as the market for external Unix support becomes more competitive.

## **E**

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### **Migration to NT Driven by Lower Support Costs**

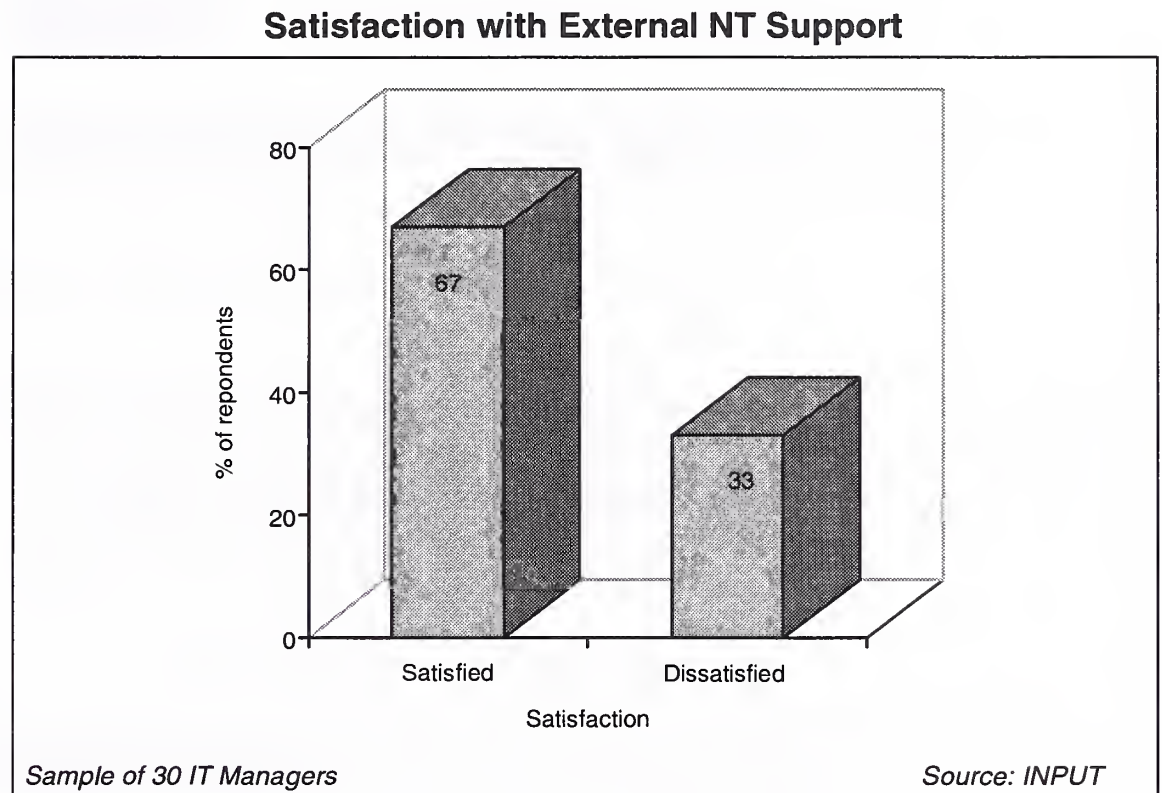
Most NT users interviewed by INPUT indicated that they were satisfied with associated external support provision.

Users perceive that only a low level of support is required for NT, as implementation is considered to be relatively simple. This gives NT a significant advantage, as lower support requirements lead to a fall in the overall cost of IT ownership.

For example, several respondents stated that it took a relatively short period of time to set up an application using an NT server and an SQL database. In comparison, similar applications on a Unix system and a DBMS take much longer to set up.

Additionally, NT support is more commonly sourced externally and more users are satisfied than dissatisfied with external NT support as shown in Exhibit III-4.

Exhibit III-4

**F****Unix Vendors Can Improve Support Offerings**

It should be noted that some user organisations did express a high degree of satisfaction with support provided by certain Unix vendors. However, this study reveals that many Unix vendors can improve their software product support offerings by:

- Providing robust and clearly defined escalation procedures
- Ensuring wider availability of online support services
- Offering access to consultants with broad multivendor expertise
- Offering guaranteed times for problem resolution
- Using online facilities to post warnings and possible solutions.

Increasing numbers of Unix vendors are leveraging their traditional multivendor hardware support expertise to capitalise on the demand for

multivendor software product support. Furthermore, Unix vendors are in a strong position with respect to the provision of software product support, as many enterprises are keen to retain a direct relationship with their Unix vendor in order to:

- Obtain all their Unix support requirements from one source
- Obtain all their support requirements from the product vendor
- Improve their relationship with vendors in terms of trust and loyalty.

By offering support that matches user demand many Unix vendors can:

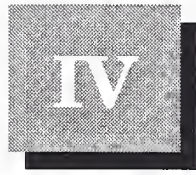
- Generate additional revenue from support
- Control the cost of ownership for their products
- Utilise support as a strategic weapon.

However, some Unix vendors, usually those that are not systems vendors, may wish to remain technology focused and outsource support to a third party. For example SCO have recently outsourced some of their support functions to Oliservice and ICL Sorbus.

In the case of Windows NT, support is more commonly sourced externally from third parties. Microsoft has chosen to focus strongly on the product aspect of their business and does not show any interest in using support provision as a means of generating additional revenue.

Instead it uses support to:

- Encourage third parties to generate revenue from supporting its products, thus offering customers a choice of support vendors
- Control the quality of support and the cost of ownership by implementing certification schemes which enable it to maintain strategic control of its support offerings.



## Windows 95 Support Issues

This chapter focuses on the support implications of the launch of Windows 95. It examines user reactions to the product and levels of satisfaction with support across Europe. Furthermore, it offers commentary on the impact of support on the overall cost of PC ownership.

### A

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#### Windows 95 Migration Issues

On August 24 1995, Microsoft initiated the largest technology upgrade programme in the history of computing.

Prior to the launch of Windows 95, Windows 3.1 had established itself as the de facto PC operating system. However, in many scenarios, particularly business critical environments, the product was considered to be inadequate. Users encountered crashes and regular general protection faults which were rarely resolved, often occurring unexpectedly. Windows 95 is a more robust product which is not expected to suffer from many of the problems that haunted Windows 3.1.

When Windows 3.1 was launched, PC computing was less pervasive. Nowadays, organisations are more dependent on PCs, so a smooth migration to Windows 95 is critical. Microsoft have facilitated migration by including intelligent installation capabilities combined with 'plug and play' attributes that minimise the disruption of connectivity to peripherals.

Besides the technical benefits of Windows 95, overall costs of ownership can be expected to fall. However, many organisations are choosing to delay migration, adopting a 'wait and see' approach.



Even if organisations decide to delay migration, the following external forces will inevitably trigger the process:

- Windows 95 is being bundled with most new PCs
- New software applications are being optimised for Windows 95
- Product support infrastructures are being primed for the 32 bit Windows environment.

If organisations attempt to resist the prevailing trend, they will soon find themselves at a competitive disadvantage.

## **B**

### **Users Recognise Advantages of Windows 95**

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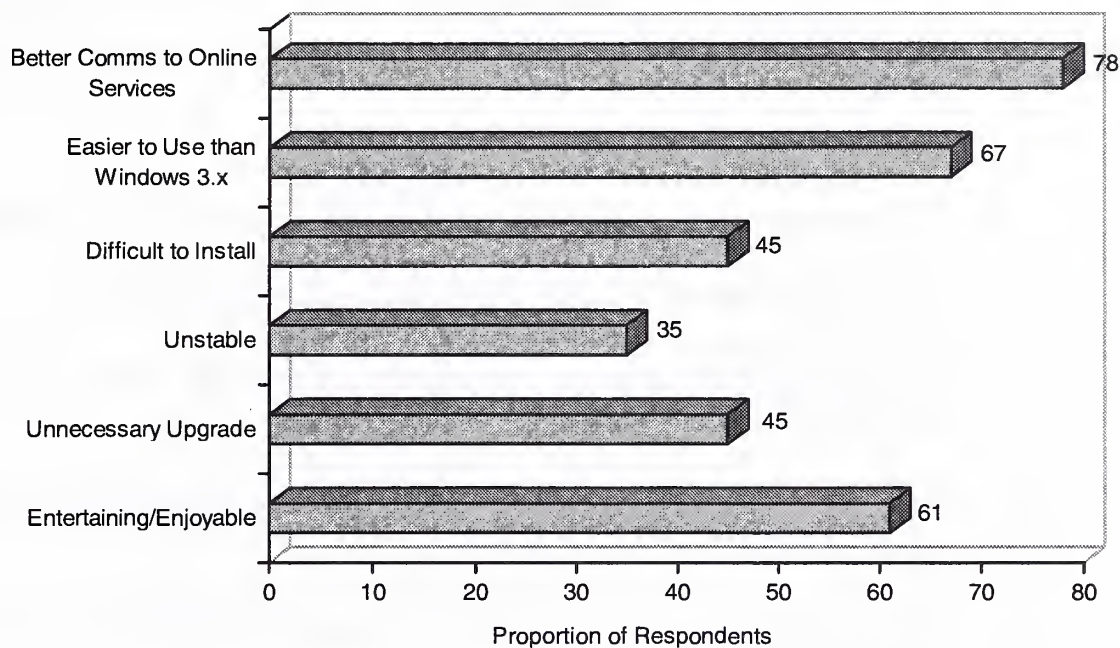
INPUT's recent user survey revealed some of the early reactions concerning Windows 95 (see Exhibit IV-1):

- Despite some well publicised problems relating to Windows 95's connectivity with peripherals, nearly four-fifths of the sample indicated that Windows 95 improved communications with online services
- Nearly 70% of the sample indicated that they found Windows 95 easier to use than previous versions of Windows
- Over half of the sample said that the product was easy to install
- Nearly two-thirds of the sample think that the product is stable
- Over three-fifths of the sample deemed the product to be entertaining/enjoyable to use
- Almost half of the sample indicated that they considered Windows 95 to be an unnecessary upgrade.



Exhibit IV-1

## Initial User Impressions of Windows 95



Sample of 60 European Respondents

Source: INPUT

The results of the survey indicate that:

- Users are responding positively to Windows 95's 'plug and play' attributes
- The fact that almost 70% of respondents think that it is easier to use than previous versions of Windows and 60% of respondents actually find it enjoyable/entertaining is a positive sign, particularly for sales in the SOHO market
- A significant proportion of the sample encountered instability, problems with installation, and believe the upgrading to Windows 95 from Windows 3.x. is unnecessary, which indicates that Microsoft have an opportunity to enhance approval ratings.

Respondents offered both positive and negative comments concerning various aspects of Windows 95.

Exhibit IV-2 shows typical positive comments about Windows 95.

## Exhibit IV-2

**Windows 95 — Positive Comments**

"Its a highly flexible system, the multitasking capability is a real selling point."

"There is a marked improvement in productivity."

"When Microsoft get rid of the hiccups, we will go for full scale implementation."

"Its one step closer to bringing homogeneity in operating systems."

"Its the natural progression for anyone who has problems with the 640K restriction on 16 bit systems."

"Microsoft did a very good job with Windows 95 and particularly with support throughout the 'beta testing' stage."

"In the initial stages the system did crash a few times but that was resolved by phoning the support line."

"There was no problem in getting telephone support for Windows 95 and we were not subject to a lengthy wait/hold time."

*Source: INPUT*

Exhibit IV-3 shows typical negative comments about Windows 95.

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Exhibit IV-3

### Windows 95 — Negative Comments

“How long before companies must make another expensive migration—Windows 97!?”

“We use an HP Laserjet and Microsoft failed to provide the correct driver.”

“Migration to Windows 95 is expensive because hardware must be upgraded. Microsoft did not advertise the fact that at least 8MB of RAM is required.”

“Microsoft is encouraging sites to buy a license per person as opposed to packages of licenses as sold by Novell - this is very expensive and discourages companies from totally committing to Windows 95.”

“The cost of training people for the upgrade is perceived as a problem.”

“Help is generally poor because you need to know the ‘keywords’ associated with the problem.”

“Compatibility problems have occurred with other software products.”

*Source: INPUT*

## C

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### Impact of Windows 95 on Cost of Ownership

Windows 95's enhanced user interface attributes and usability features will result in productivity increases and thus reduce the overall cost of PC ownership.

These enhancements will lower support costs as users at both the low and high ends of the skills hierarchy encounter fewer problems. However, initial support costs will increase as organisations migrate to the 32 bit environment but, given the new attributes of the product, these costs will fall over time.

Many early adopters of Windows 95 encountered serious problems when they belatedly discovered that their existing hardware infrastructure was unsuited to Windows 95.

Understandably, this has caused some dissatisfaction among the user community, many of whom have stated that Microsoft did not clearly advertise the fact that hardware upgrades would be necessary. These hardware upgrades push up the costs of migration, although the cost of ownership can be expected to fall in the long run.

Many Windows 3.1 users operate systems with 4Mb of RAM. Windows 95 requires at least 8Mb of RAM and in order to fully exploit the product, users will need to utilise 16 Mb of RAM. Existing 386 and low end 486 machines will also fail to reap the full benefits of Windows 95. Many user organisations will therefore feel forced to invest in a whole new suite of high performance PCs.

Microsoft have also launched a 32 bit version of MS Office to complement the new operating system. Again, user organisations will consider it necessary to upgrade to the most advanced software which in turn will reinforce the need for more RAM and more hard disk space.

These hardware and complementary software upgrades will further increase the demand for support services as organisations re-configure their entire PC infrastructures.

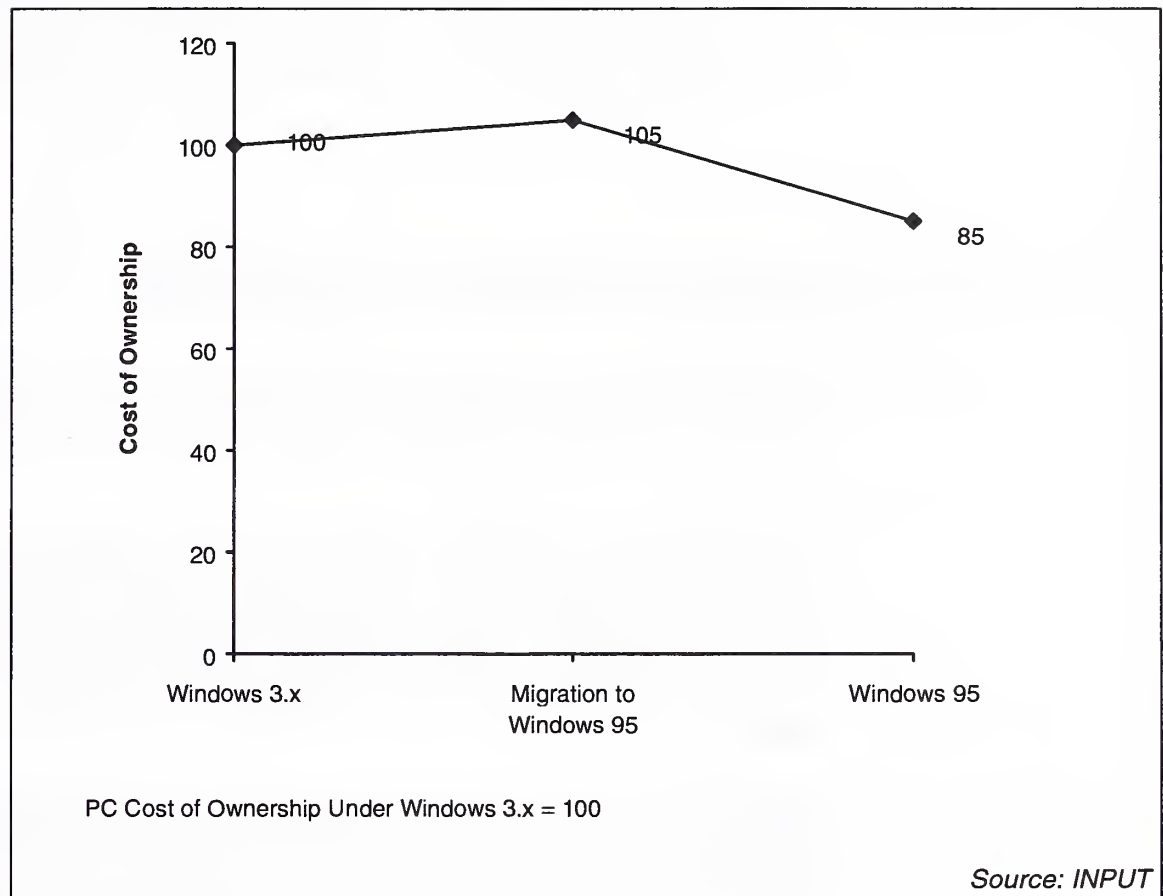
INPUT estimates that initial migration costs will raise the yearly PC cost of ownership by 5%. This can largely be attributed to the expense of hardware upgrades and training costs. However, after one year of ownership, INPUT expects the cost of PC ownership to be 15% lower than it was prior to Windows 95 migration.

Exhibit IV-4 illustrates the changes in PC ownership costs precipitated by Windows 95 migration.



## Exhibit IV-4

## Windows 95 Migration — PC Ownership Costs



Users have expressed confusion regarding Microsoft's long term desktop operating system strategy. This has acted as a hindrance to Windows 95 migration for many user organisations as Windows NT Workstation is increasingly being perceived as a product that is technically superior to Windows 95.

If user organisations upgrade their systems to a minimum of 16 Mb of RAM, they can run Windows NT. Many IS managers believe that investing in Windows NT will be more future proof than upgrading to Windows 95 and have chosen to delay migration decisions until further information concerning the next version of NT, Windows NT Cairo, becomes available.

Despite its many positive attributes, Windows 95 is not yet perceived to be free from bugs. Many organisations are delaying migration until bugs have been removed. Additionally, some users perceive a delay as sensible because it will enable Microsoft and its desktop support partners to optimise their Windows 95 support services based on the experiences of early adopters.



User organisations that wish to use Windows 95 as client software in business critical client/server environments are particularly cautious about early implementation. However, Windows 95 does answer many of the reliability problems that sullied the name of Windows 3.1.

## D

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### The Impact of Migration to Windows 95 on Support

Considering that Microsoft has a 90% share of the PC operating system market, the scale of the likely migration to the new environment is enormous.

Over the next year INPUT expects at least a third of current Windows platforms to be upgraded to Windows 95. The market for systems software support in particular will be stimulated by this development. In addition, there is likely to be a high level of demand for initial user training.

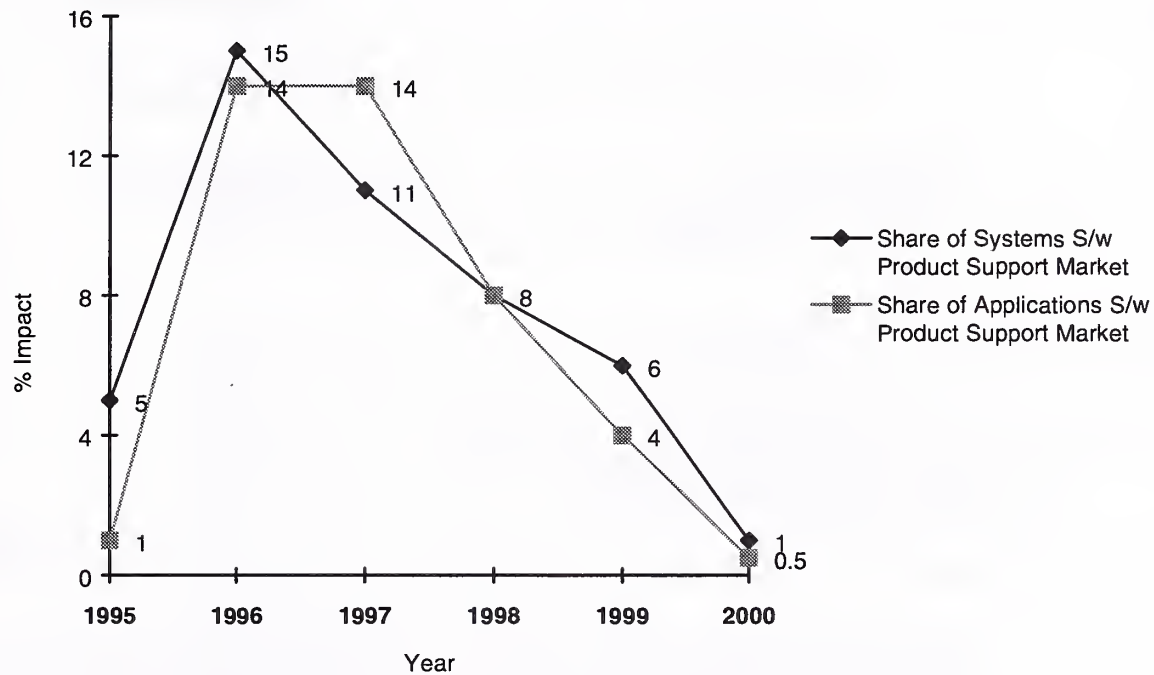
Microsoft has anticipated likely support capacity problems and found it necessary to stimulate the market for third party support provision for their products. Systems vendors and independent vendors are exploiting this opportunity and many have signed up as Microsoft Desktop Support Teams and Microsoft Solution Providers. Growing numbers of software product vendors can be expected to follow the lead set by Microsoft and encourage third party support for their products.

The upheaval of migration will additionally increase demand for associated software product support. Over the next year, users will inevitably encounter problems relating to running legacy software, and installing and using some new software applications.

However, software developed since the launch of Windows 95 will almost invariably be Windows 95 compatible. Problems caused by software products interoperating with Windows 95 will fall steadily over time.

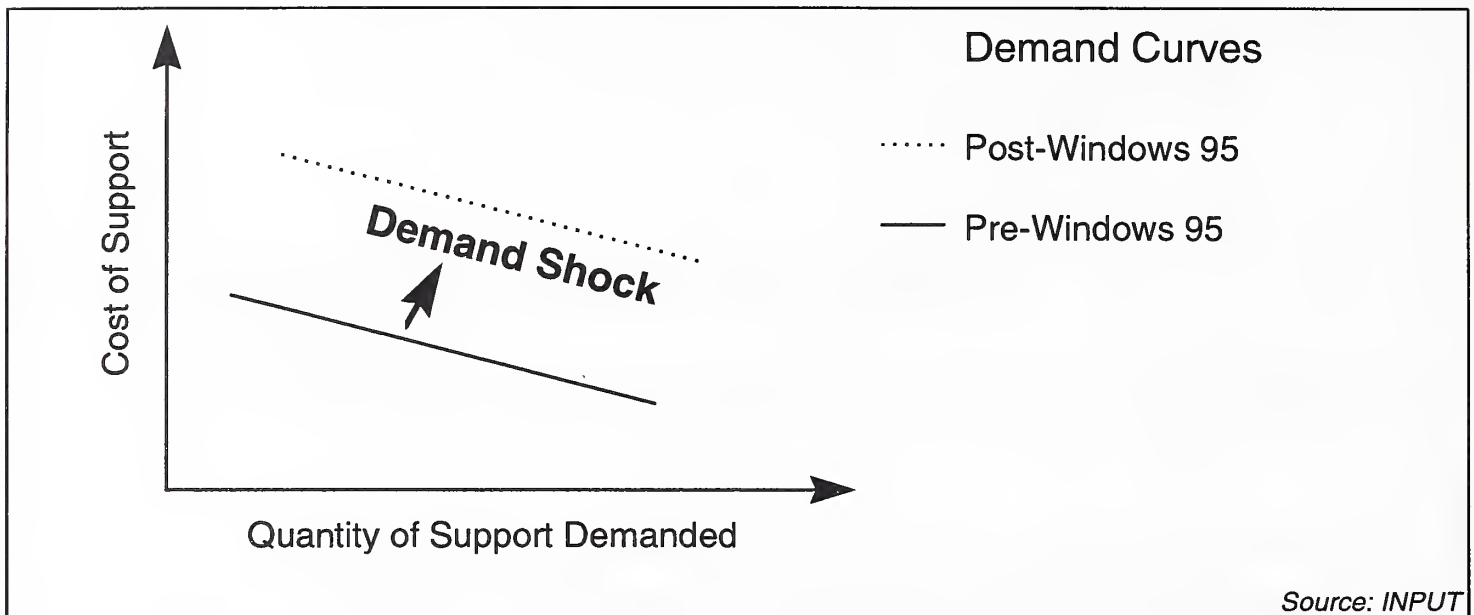
In 1996, support precipitated by migration to Windows 95 can be expected to account for 14% of the \$2 billion European applications support market, and 15% of the \$1.9billion systems support market (see Exhibit IV-5).

Exhibit IV-5

**Impact of Windows 95 on the Software Support Market***Source: INPUT*

Essentially, the launch of Windows 95 will cause a demand shock as demand for support increases. In the short term, this could lead to higher prices for support provision in some sectors, given the limited capacity of software product support services (see Exhibit IV -6).

Exhibit IV-6

**Demand Shock Caused by the Launch of Windows 95**

Additionally, Windows 95 will have an effect on the support offerings for the whole computing infrastructure, as new tools and configurations are released to exploit the new environment.

In the survey undertaken for this study, users considering migration to Windows 95 expressed concern regarding the following issues:

- Support of new client/server applications
- Support of product integration with non-Microsoft server operating systems
- Support of product integration with new PC applications.

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**E**

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**User Satisfaction with Windows 95 Support**

A survey conducted by INPUT in September and October 1995 identifies initial user impressions of Windows 95 support.

The most significant finding was that users of Windows 95 are more satisfied with its associated support than with support offered for Windows 3.x. (see Exhibit IV-7)

It must be noted that Microsoft's new support infrastructure applies to all Microsoft desktop products including those released prior to the launch of Windows 95. Therefore, the relatively negative responses concerning Windows 3.1 can be attributed to using Windows 3.1 support services before the new support infrastructure was established.

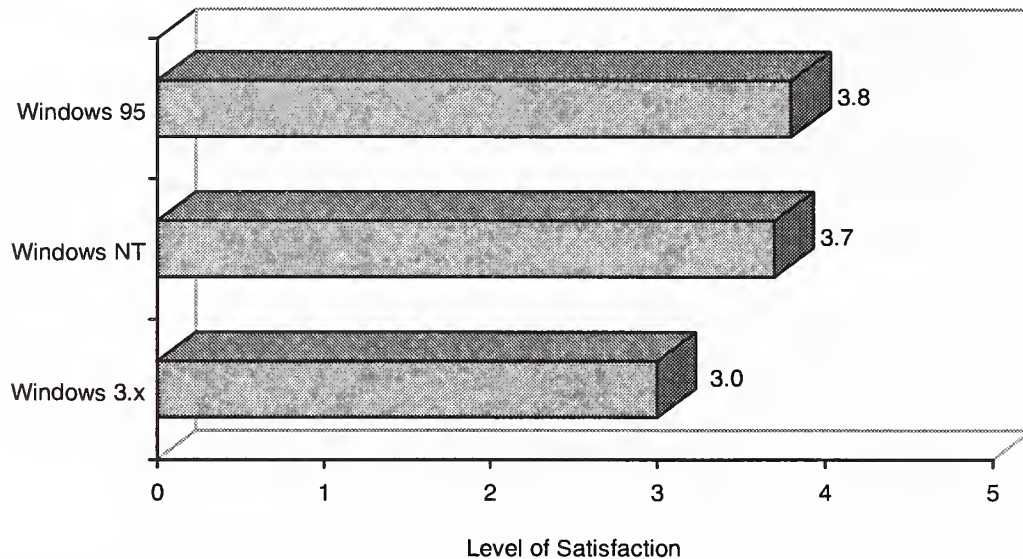
Users were also asked to express their level of satisfaction with support arrangements for Windows NT.

Exhibit IV-7 shows the user satisfaction ratings, and demonstrates the following:

- Users show a high level of satisfaction with Windows 95 support
- Users indicated a higher level of satisfaction with Windows 95 support than with Windows 3.x support
- Users perceived that support arrangements for Windows 95 and Windows NT are roughly equal
- Users are becoming progressively more satisfied with support provision for Microsoft operating environments
- The satisfaction ratings for Windows 95 and Windows NT indicate that there is still a need for improvement.



Exhibit IV-7

**User Satisfaction with Windows Support***Number of respondents 60**Source: INPUT*

## **F**

### **Satisfaction with Windows 95 Support Consistent Across Europe**

Early reactions to Windows 95 support varied by geographical territory. Microsoft admits that in the first few days after the launch, the support infrastructure in the United States was over-stretched, customers were not satisfied, and contingency plans had to be rapidly implemented.

Users in Germany, France and the United Kingdom were asked to express their levels of satisfaction with support arrangements for Windows 3.x, Windows NT, and Windows 95. Exhibit IV-8 illustrates levels of satisfaction with Windows desktop operating systems in Germany, France and the United Kingdom.

The research findings indicate that:

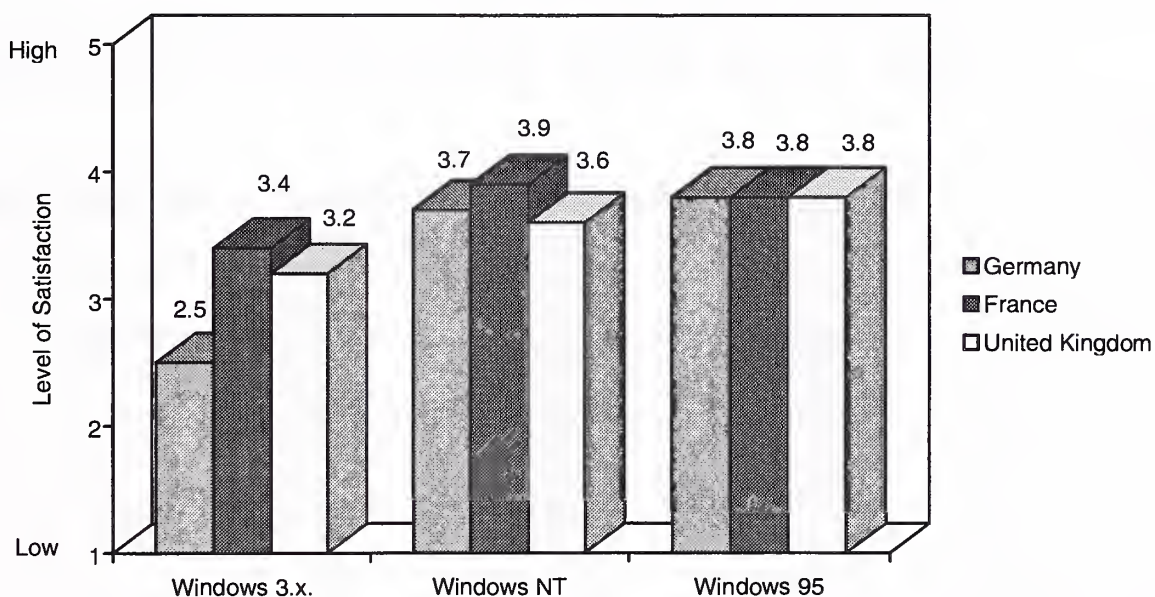
- French users express, on average across the three products, the highest levels of satisfaction
- German users express, on average across the three products, the lowest levels of satisfaction



- German users show the most significant increase in satisfaction ratings between Windows 3.x and the more recently launched desktop operating environments
- Users express an equally high level of satisfaction for Windows 95 support across the three countries.
- Microsoft's support infrastructures are successfully absorbing demand for support
- Users in each of the three countries surveyed are, to varying degrees, more satisfied with Windows 95 support than with previous Microsoft support offerings.

Exhibit IV-8

### User Satisfaction with Microsoft Desktop Operating Systems in Germany, France and the United Kingdom



Sample 60 European Respondents

Source: INPUT

## G

## Microsoft Desktop Support Teams Successfully Absorb Demand for Support

The improvement in satisfaction ratings for the support of more recent Microsoft products can largely be attributed to Microsoft's successful utilisation of support partners.

The company has stimulated an external market for the provision of external Windows 95 support by paying partners to act as desktop support teams.

This has also enabled the company to massively increase its capacity to resolve user problems. Microsoft now claims that 90% of calls made in Europe are answered within 60 seconds and that customers wait for an average of 35 seconds.

Essentially, Microsoft outsources support calls by routing them to partners who act as transparent agents.

Microsoft's partners for the support of Windows 95 and its other desktop products in its three largest European markets are listed in Exhibit IV-9.

Exhibit IV-9

### Microsoft Desktop Support Partners in the United Kingdom, France and Germany

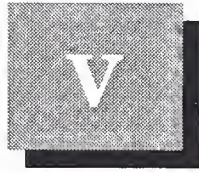
United Kingdom	France	Germany
● Digital	● ICL Sorbus	● Digital
● ICL Sorbus	● Stream	● Stream
● Unisys	● IPA	
● Stream	● Helpline	
● PSC		

Source: INPUT

Microsoft have admitted that they are not providing as much Windows 95 support as they had initially expected. INPUT believes that this situation has been created by:

- Windows 95's attributes such as its 'plug and play' features reducing the need for support
- A slower than expected uptake of Windows 95.

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## Understanding the User Environment

This chapter offers more general advice for vendors in terms of:

- Understanding users multivendor software environments
- Matching user support needs.

### A

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#### Segmenting Customer Needs—Key to Opening Software Product Support Opportunities

Until recently, IS managers did not consider Windows NT Advanced Server to be adequate as a midrange server operating system. Now, it is outshipping any single Unix variant and could well outship all Unix variants combined by the end of next year.

One IS manager interviewed by INPUT commented “ Last year when I proposed implementing NT, I was challenged. People said that it was flaky, unreliable and unproven. This year nobody questioned my decision to implement NT”.

As NT and Unix are being implemented increasingly in business critical client/server environments, software product support is becoming a significant choice determinant.

Although most users interviewed by INPUT stated that technical considerations were their primary choice determinants, the significance of support becomes apparent as it accounts for an ever increasing proportion of the overall cost of ownership.



The launch of Windows 95 has had a massive effect on the whole support industry, since support offerings for all products that integrate with Windows 95 have been revised to meet anticipated requirements.

The user community had developed negative impressions of Microsoft support offerings prior to the launch of Windows 95. However, over the past year, Microsoft has revolutionised its support infrastructure by partnering with other vendors in order to ensure sufficient capacity to deal with expected support demand.

In 1995, largely due to the increasing complexity of the client/server environment and the increased importance of support, user demand for support has increased and precipitated the following support requirements:

- Flexible support that matches user skills profiles
- Support that is tailored to individual multivendor environments
- Product integration expertise.

## **B**

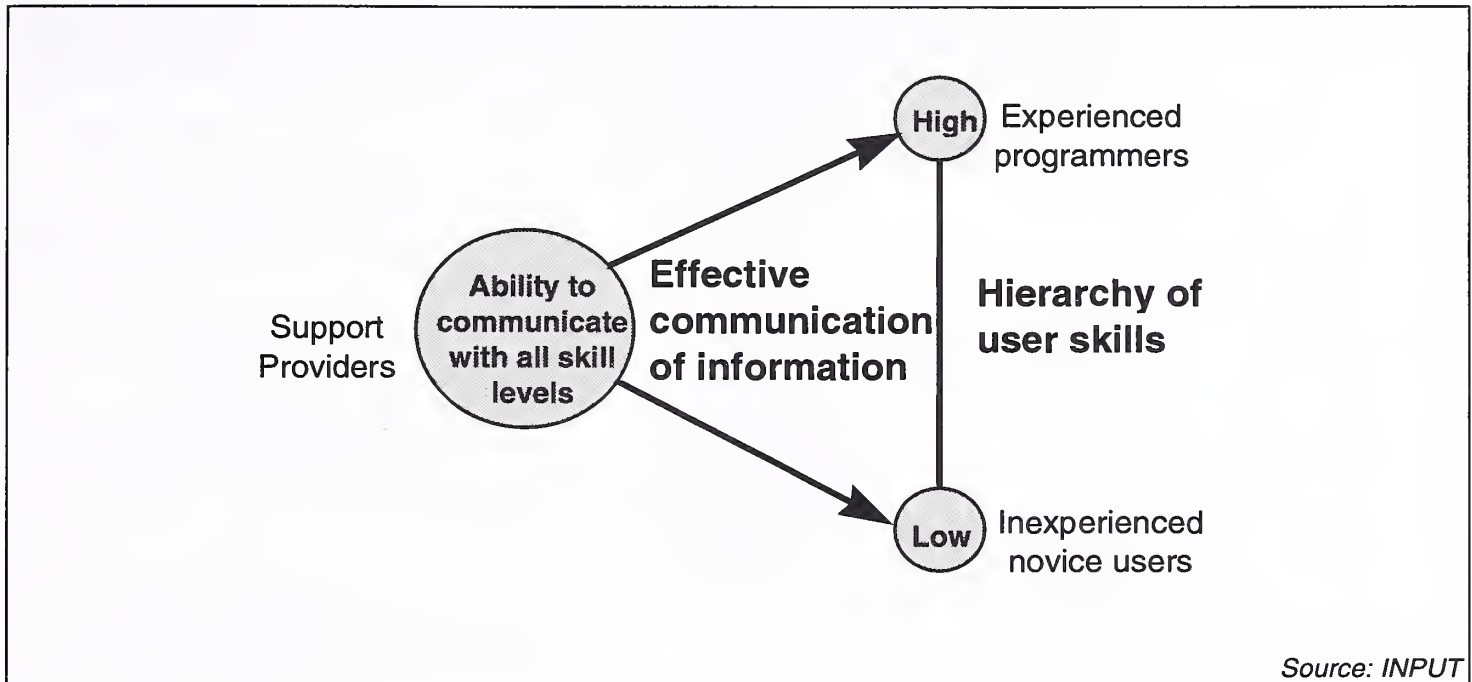
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### **Support Must Match Individual User Skills Profiles**

Users possess a broad variety of skills and varying degrees of understanding of the technology that they operate.

Support infrastructures must possess communications capabilities that facilitate the effective transfer of information from support provider to user. It is essential that support providers use terminology which the novice user can easily understand. Equally, it is important that the support providers can understand the vocabulary used by highly experienced programmers as illustrated by Exhibit V-1.

Exhibit V-1

**The Hierarchy of User Skills****C****Support Must Suit Each Unique Multivendor Environment**

As computer systems match specific business requirements more closely, the computing landscape is becoming increasingly heterogeneous.

Exhibit V-2 illustrates some typical support requirements.

## Exhibit V-2

**Typical User Organisation Support Requirements**

Type of Organisation	Typical Support Requirements
Large enterprise running mission critical business applications	Close relationship with support vendor, preferably the product vendor, 24x7 cover, guaranteed problem resolution times, ability to communicate with users with a broad range of user skills profiles
Medium sized organisation running business critical business applications	Close relationship with support vendor, 24x7 cover, guaranteed problem resolution times, lower prices, communicate with narrower range of users than is necessary for larger enterprises
SOHO environment	Low cost cover, clear and simple explanations of problems, short call waiting times, 24x7 cover is optional.

*Source: INPUT*

Such multivendor environments themselves vary according to the degree of disparate product integration. Some environments will be comprised of products sourced from only two or three vendors, whereas others may consist of products supplied by many different vendors.

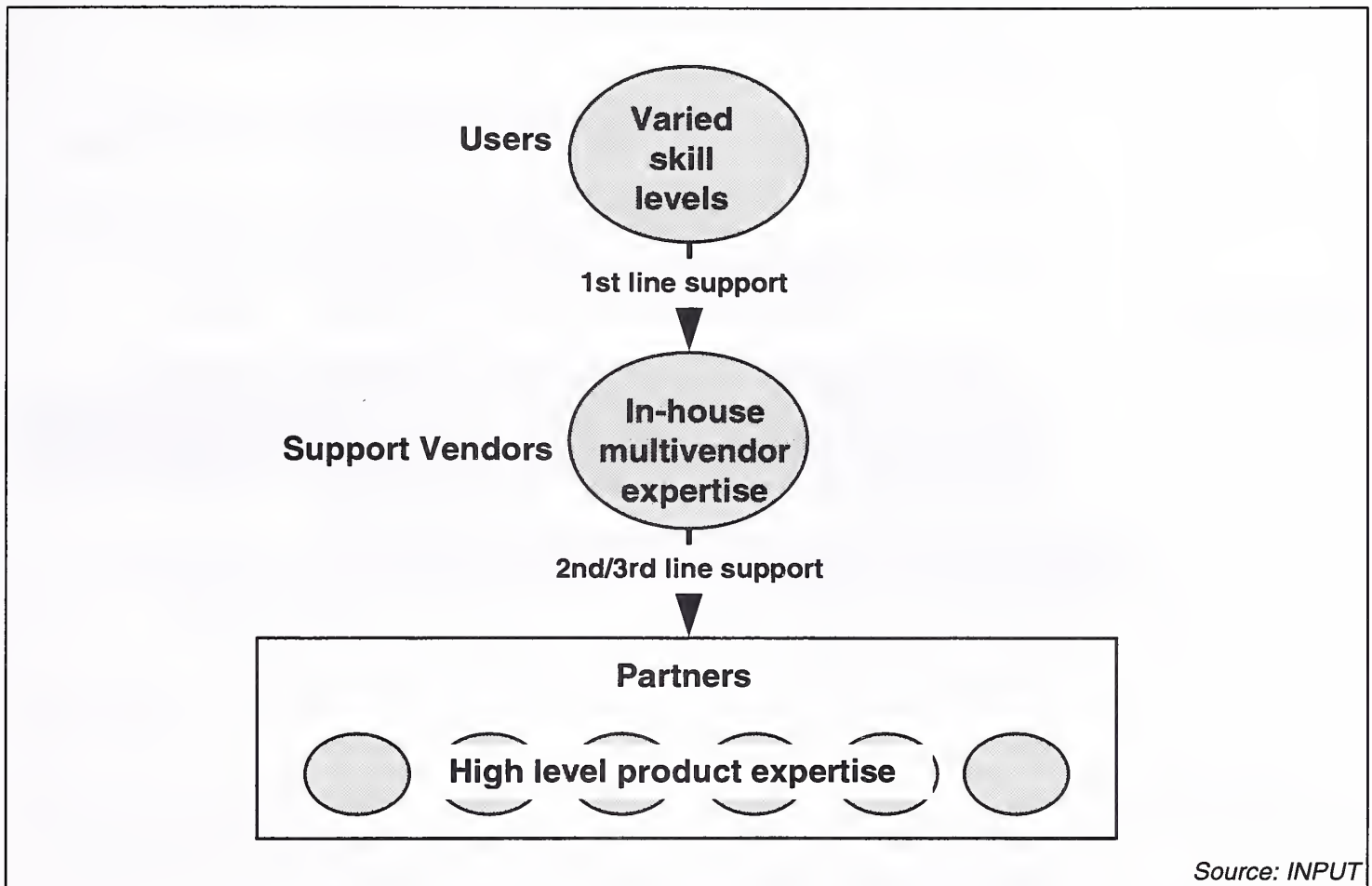
Users do not wish to take out multiple support contacts for each piece of software. Additionally, the user may be unable to isolate a problem to one particular software product, so the vendor must offer problem isolation expertise.

Many software problems are generated by the integration of different products so the vendor must also offer product integration expertise.

Essentially, users require vendors to take ownership of problems, isolate them, and use whatever means are necessary to resolve the problems.

This necessitates the development of strategic alliances between vendors. Individual support vendors should offer as much in-house multivendor expertise as possible and arrange to route calls to appropriate strategic partners if the problem escalates as illustrated in Exhibit V-3.

Exhibit V-3

**Problem Escalation Procedures**

## D

### **Product Integration Increases Support Needs/Costs**

As the software product industry matures and businesses become more reliant on software products, the products are becoming more robust and reliable.

Increased competition and lower margins in the software product market are forcing product vendors to thoroughly test and pilot products prior to their launch.

Unreliable products generate an increased demand for support that raises the cost of ownership. Today's more robust products are cheaper to support as individual products.

However, the integration of disparate products in complex client/server environments is increasing the costs of support and ownership. Individual



products may be less prone to problems but the integration of products sourced from different vendors causes extremely complex problems which can only be addressed by well organised, multivendor support infrastructures.

The growth of single source, multivendor support offerings will trigger customer demand for higher value support services.

Exhibit V-4 illustrates some likely future support requirements.

Exhibit V-4

#### Typical User Organisation Support Requirements

Current Offerings	Future Offerings
Reactive Support	Proactive support
Low training expenditure as a proportion of support costs	High training expenditure as a proportion of support costs
Problem ownership	Total support ownership

Source: INPUT

The business critical nature of support will inevitably produce a demand for preventative proactive support. Opportunities will arise for support consultation.

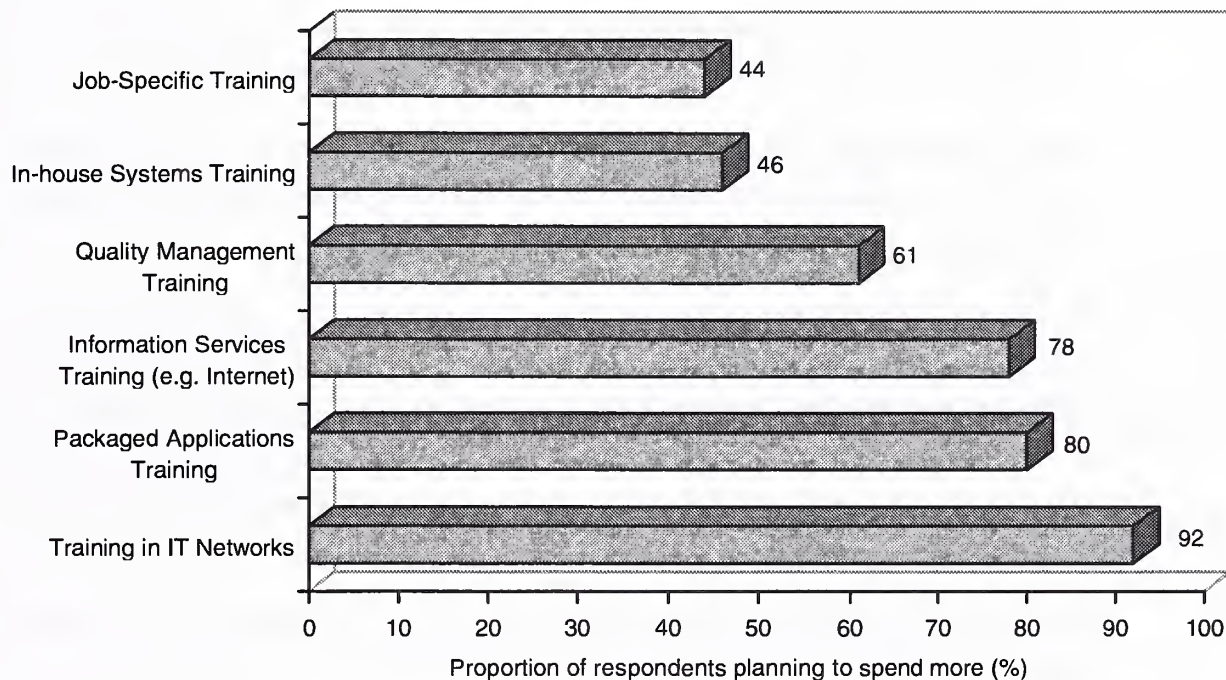
User organisations are increasingly recognising the need for training in the complex client/server environment. Training investments will reduce support needs, especially for technically unskilled users.

In a recent INPUT survey, most user organisations revealed that they intend to increase education and training expenditure (see Exhibit V-5).



## Exhibit V-5

## Increased Education and Training Expenditure



Sample of 90 Respondents

Source: INPUT

Customer demand for problem ownership will evolve into a requirement for total support ownership as the complexity of support requirements increases.

Some organisations will demand total support ownership from support planning to the provision of solutions. This will enable them to plan for the costs of support and amortise the costs of ownership over the lifetime of the system in question.

At the desktop operating system level, support is less likely to be business critical and the environments to be supported will often be less complex than those at the server level.

Essentially, Unix and NT Advanced Server support will have to address the complexities of the multivendor environment. Windows 95 offerings need not embrace the multivendor environment to such a great degree. Indeed, independent support vendors are now able to offer support for most desktop products although relatively few vendors are able to address the complexities of the multivendor server environment.

**E**

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**Requirements for Unix and NT Advanced Server Support**

Unix and NT support vendors must identify the users to whom they provide support and the nature of their support requirements.

Unix and Windows NT Advanced Server do not compete in the desktop domain. Demand for the support of these products will primarily come from users in medium sized and large organisations.

Many users will be users of business critical software who demand 24x7 support with guaranteed response times. Each user will have their own particular skills profile. Some users will be inexperienced and others will be experienced programmers. Most users will fall somewhere in between these two extremes. Additionally, each organisation will have its own unique multivendor environment.

Customers typically require the following support offerings at the server level:

- Support tailored to individual user skills profiles
- Support tailored to their unique multivendor environments
- 24x7 support provision
- Guaranteed problem resolution times
- Single source multivendor support
- Call logging and management capabilities
- Alliances with vendors of products found in the multivendor environment and a call routing capability
- Ability to isolate problems within the multivendor environment
- In-house communication skills in order to explain problems to inexperienced users in clear and simple terms
- Clearly defined escalation procedures

- First line support availability via the Internet. Vendors should provide email addresses to customers for the purpose of requesting first line support
- Multilingual capabilities
- Provision of online knowledge bases and other information sources for frequently occurring problems
- A close relationship with individual customers. Customers should have a contact who is familiar with their particular needs
- Proactive support. Vendors should consult customers regarding their systems and provide advice on problem avoidance
- Vendors should create email distribution lists of customers and send messages directly regarding possible problems or upgrades
- Upgrades should be available online
- Flexible pricing structures.

## F

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### Lessons for Windows 95 Support Vendors

In the desktop domain, support is generally a less critical variable. However, vendors should acknowledge that demand for business critical support at this level exists when Windows 95 is used in client/server environments.

The major difference between support at this level and support at the server level is the large proportion of customers who use the software in the SOHO environment.

Customers operating in the SOHO environment have less demanding support requirements than those at the server level and will be unwilling to spend as much on support.

Windows 95 support vendors must put less emphasis on expensive labour intensive offerings such as:

- Individual consultations for problem avoidance

- Individual dedicated support consultants who are familiar with the each customer's needs
- 24x7 2nd/3rd line support.

Vendors must therefore focus on ways of reducing the costs of support and offering a wider range of options targeted both at SOHO users and those operating in complex client/server environments.

Vendors should create a more automated support infrastructure as a means of reducing the costs of providing support.

They should employ technology such as:

- Online service delivery mechanisms
- Call handling technology and helpdesk software
- Systems management software.

Support vendors can, to some extent, substitute traditional support vehicles such as the telephone with automated support delivery mechanisms such as the Internet as means of offering first line support.

Software product support delivery should exhibit the following characteristics:

- First line support provided via the Internet
- Upgrades and patches offered over the Internet.

Other forms of first line support provision should include:

- Online knowledge bases
- Lists of frequently asked questions (FAQs) with answers
- Bulletin boards posting warnings and company press releases
- Discussion forums (Usenet).

User organisations can also utilise the following digital technology:

- The use CD-ROM for distribution of known problems and problem resolutions



- The use of video and desktop conferencing.

In order to further reduce costs, Windows 95 support vendors should exploit Computer Telephony Integration (CTI).

CTI technology is an important means of reducing service delivery costs whilst improving quality for call centres.

It offers improved call handling, and ease of integration with systems such as Automated Call Distribution (ACD), Interactive Voice Response (IVR) and helpdesk management software.

Vendors should exploit the following functions of helpdesk management software:

- Call management capability
- Interfaces with system and network software
- Inventory management
- Training needs analysis
- Telecoms integration
- Links to databases containing answers to previous queries
- Call archiving support
- User definable escalation levels.

## G

### Vendors Must Anticipate User Support Requirements

Given the respective support infrastructures that must be established in response to customer needs at the server level and the desktop domain, vendors must acknowledge that support covering the entire spectrum, from the desktop to the high end server level is critical for many users.

Often, support vendors do not have the in-house resources necessary to support the entire client/server environment and tend to concentrate on



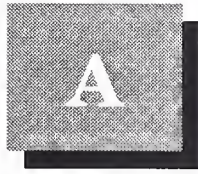
the desktop domain. These vendors must focus on the high volume, low margin SOHO market.

However, vendors who wish to penetrate the high value segment of the software product support market which encompasses multivendor support for all products used in the client/server environment must offer integrated support packages targeted at medium sized and large organisations.

Such vendors must support inexperienced Windows 95 users who have relatively simple problems as well as highly technically literate users who have problems with, for example, the integration of Oracle and a particular Unix variant.

Support infrastructures that can filter problems depending on their levels of complexity and skill profiles of particular users are essential in order to deliver an efficient service.

Comprehensive support infrastructures should utilise mechanisms that enable vendors to anticipate likely user needs given a particular multivendor environment such as predictive call handling.



# Windows Software Support Survey

We are surveying current reactions to software support issues relating to Windows and would be grateful if you could answer a few questions.

1a. Are you currently using Windows 95? *(Please tick)*

Yes

*If yes, go to Q2*

\_\_\_\_\_

No

*If no, go to Q1b*

\_\_\_\_\_

1b. If you are not using Win 95, what is your organisation's position with regard to it?  
*(Please tick)*

Evaluating it

\_\_\_\_\_

Plan to use it within 6 months

\_\_\_\_\_

Plan to use it within 1 year

\_\_\_\_\_

Plan to use it sometime in the future

\_\_\_\_\_

Prefer MacOS

\_\_\_\_\_

Prefer Windows NT

\_\_\_\_\_

Prefer UNIX on the desktop

\_\_\_\_\_

Other

\_\_\_\_\_

If you have any comments regarding your organisation's position with regard to Windows 95, please write them below. *Go to Q2b*

2a. How many people in your company are using Windows 95?

2b. If you are already using or are considering using Windows 95, what are your initial impressions of it? (*Prompt so as the answers can be analysed more closely. Please insert Y for yes and N for no*)

Entertaining/Enjoyable

Unstable (encountered bugs)

Easier to use than Windows 3. X

Better communications to on-line services

Difficult to install

Unnecessary, there is no need for a new OS

Other (Please write below)

3. What are the major issues/problems that you anticipate/have encountered during the installation and early use of Windows 95? (*prompts:- technical support lines were busy, system crashed or froze, applications would not run on it*) List the issues in the space provided below.

4. Indicate which forms of support you have used (*please tick*). If you have not used a form of support shown below, please rate it on a scale from 1 to 5 in terms of the likelihood of you using it. (*1 is very unlikely and 5 is very likely*)

	tick if used	likelihood of use (1-5)
On-line services	_____	_____
Windows 95 Plus Assist on CD-ROM	_____	_____
Windows 95 standard help	_____	_____
3rd party software (e.g. Norton Utilities)	_____	_____
Help Desk	_____	_____
On-site technical staff	_____	_____
Other, please specify	_____	_____
_____	_____	_____
_____	_____	_____

5. Who have you contacted/would be most likely to contact for support? (*Please tick*).

Microsoft	_____
Hardware vendor	_____
Application software or peripheral vendor	_____
Retailer/distributor that sold you Windows 95	_____
Systems Integrator	_____
Independent Help Desk company	_____
Internal help desk	_____
Other, please specify	_____
_____	_____
_____	_____

6. How do you rate the software support provided for the following categories

*(Please rate on a scale of 1 to 5 where 1 = very satisfactory and 5 = very unsatisfactory)*

Windows \_\_\_\_\_

Windows in general \_\_\_\_\_

Other software products that you use \_\_\_\_\_

Any other comments \_\_\_\_\_

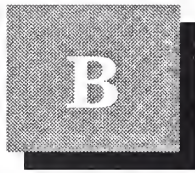
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Thank you for your assistance**



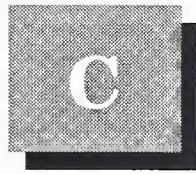


## **Interview Guide - NT & UNIX Systems Software Product Support**

The following questions were used as prompts in a series of 30 in-depth interviews.

- A. How important is software product support? Is it an issue that influences your choice of systems software?
- B. Are your support services sourced internally or externally?  
Why has this source of support been chosen?  
If you have not chosen 3rd party support, why not?
- C. If your support services are sourced internally, do you intend to source support services externally.
- D. Are you satisfied with external Unix/NT support offerings?
- E. What changes would you like to see in the support of your software products (UNIX/NT)?

(Blank)

**A**

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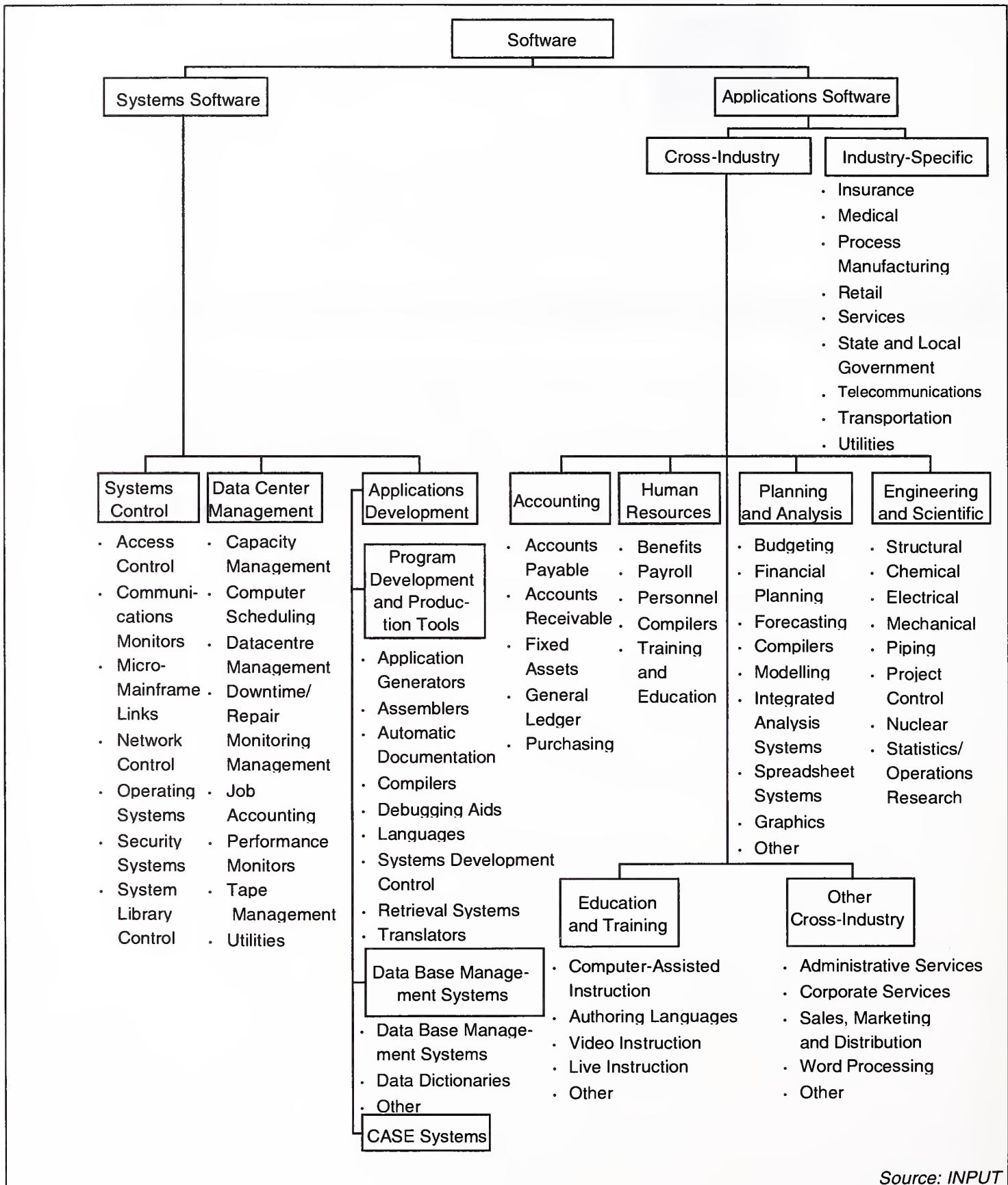
**INPUT's Classification of the Software Product Support Market**

INPUT defines the Software Product Support as those continuing activities provided by a vendor that are necessary to make the product work, outside the delivery of the product itself. Included are associated support activities such as telephone support, problem analysis and remote software diagnostics, software updates, software installation on-site support and initial training.

Exhibit C-1 illustrates INPUT's definition of the software products market.

Exhibit C-1

## Software Products Market Segmentation



Source: INPUT

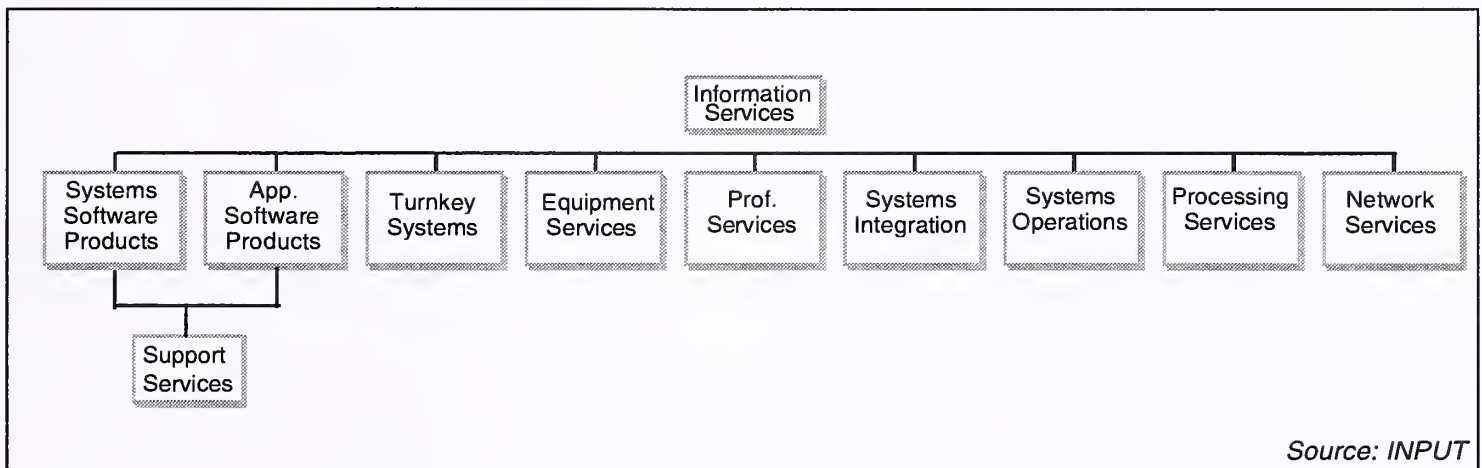
Exhibit C-2 shows the structural segmentation of the software and services industry used by INPUT in analysing the European and world-wide markets.

In each service sector, the definition of user expenditure includes only those services provided to users by an external organisation on a chargeable basis. Services provided by subsidiaries or internal resources are excluded from the open market.

For coverage of the entire software and services opportunity see the INPUT report *Software and Services Market Analysis and Forecast — Europe, 1995-2000*.

Exhibit C-2

### Information Services Market Segmentation





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